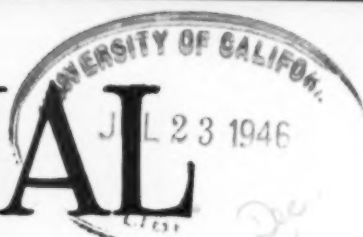


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JOURNAL

OF THE

AMERICAN VETERINARY MEDICAL ASSOCIATION



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Convention Number

83rd Annual Meeting Boston, August 18-22, 1946

Volume CIX • JULY 1946 • Number 832

**AVMA
CONVENTION CITY
NINETEEN FORTY-SIX**

**Historic Shrine of Higher Ideals for
Veterinary Medicine**

There is much to commemorate on the forthcoming visit to Boston, the AVMA convention city of 1946, but nothing to the veterinary profession is quite equal to the meeting of fifty-four years ago when, by resolution, a sharp distinction was made between competent and incompetent medical service for the livestock industry, and the first step was taken to make veterinary medicine an acceptable unit of the biological sciences.

Besides this step, preëminent in the annals of veterinary medicine in this country, one felicitates Boston for leadership in medical education and literature, for the early application of livestock sanitary science, and for its steadfast faith in collegiate and association work as an instrument of progress.

**AS CITIZENS, SOLDIERS, AND
DOCTORS, THERE IS MUCH TO
BE SALUTED AT BOSTON — THE
NATION'S BIRTHPLACE AND PIONEER OPPONENT OF
INCOMPETENT VETERINARY SERVICE.**

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VOL. CIX

JULY, 1946

NO. 832

The Boston Session—A Message from President Farquharson

THE HOLDING of the eighty-third annual meeting in Boston—the first complete session of the Association since 1942—will be a memorable home-coming and promises to be a noteworthy event in the annals of veterinary medicine. After an absence of fifty-four years, it is fitting to return to that famous center of American education which was the host of many early meetings and which furnished more than its share of wise counsel and leadership to the Association during the critical period of its development. There will be much to celebrate and to refresh the mind on the early determination to keep veterinary medicine abreast of the other learned professions. The occasion will be a reminder of the first attempt to found a veterinary college, of the site of the profession's first periodical, of the first college to set a higher standard of veterinary medical education in the United States, and among the first to seize the idea of bringing local veterinarians into stated conferences for mutual advancement.

While some of these movements may have passed from our memories, they are indelibly stamped upon the foundation of those professional achievements which were to donate richly to our country's leadership among the nations of this period. The advantage of a sufficient livestock industry, which was a dominant concern far back into colonial days, crystallized in Boston where the modern pattern for the eradication of animal diseases began to take form and was employed by the founders of this Association. For facts in this respect that ought to be unforgettable, one turns to the biographies of such men as J. H. Stickney, C. M. Wood, R.

Wood, E. F. Thayer, C. P. Lyman, W. Bryden, F. H. Osgood, and J. F. Winchester, and to the pages of the early magazines. The far-sight, the erudition, and the dignified but forceful actions of these Massachusetts pioneers brought the



President James Farquharson

national veterinary problem squarely before the people for the first time. To single out one example: the stamping out of contagious pleuropneumonia of cattle from Massachusetts, while that plague was spreading swiftly westward and threatening the country's entire cattle industry. For that achievement, the credit goes to Dr. E. F. Thayer, the Association's fifth president, a name we venerate and keep uppermost in mind. Another example of this type was Dr. J. F. Winchester's aggressive (if premature) approach to the bovine tuberculosis problem on a state basis before

the days of centralized regulation. If methods have changed, the principles laid down by these pioneers remain the same.

I am also prompted to mention that the Boston meeting of fifty-four years ago was the starting point of better veterinary education. The course of instruction acceptable to the Association was advanced from two to three years. Leaders in this movement were Drs. F. H. Osgood and C. P. Lyman, School of Veterinary Medicine, Harvard University, Dr. Rush Shippen Huidekoper, School of Veterinary Medicine, University of Pennsylvania, and the president at that meeting, and Dr. Olaf Schwartzkopf, formerly of Northwestern Veterinary College, University of Minnesota. Although the forward step was bitterly contested, the resolution was passed by an overwhelming majority representative of the Boston spirit in the matter of educational standards.

The lapse of time between 1892 and 1946, during which there were no meetings in Boston, has historical implications in that it corresponds to the period of tremendous expansion of veterinary science from coast to coast along with the livestock industry. It was the fifty-four years during which the national association was made national in fact for, during the succeeding decade, meetings were held in Chicago, Des Moines, Nashville, Buffalo, Omaha, Detroit, Atlantic City, Minneapolis, and Ottawa (Ontario). That is why one must point to Boston as the starting place of our nationalized activities.

In regard to the wartime lapse of complete meetings, it is an obligation to emphasize that the Association functioned along well-defined lines in behalf of the war effort. While the meetings of 1943, 1944, and 1945 were incomplete, the executive department remained active and alert

to the country's needs. The coöperation of the AVMA and the state veterinary associations with government agencies to help maintain a competent civilian service, with maximum attention to military needs, had phenomenal sequels. The control of animal diseases was maintained, in spite of handicaps and, in some respects, surpassed that of normal times; the achievements of the military group, now being written into the records, have lifted veterinary military service to a level never before attained in the modern world. Also, the Association advanced in affluence, membership, and financial security through watchful supervision of its operations, the expansion of its sphere, and the improvement of its literature. What may have been lost by the holding of incomplete meetings was surely gained by closer attention to the wartime emergencies.

The prospect of a complete session plus the attractions of the historic convention city, which many will be visiting for the first time, have resulted already in a large number of hotel reservations, indicating a capacity attendance. The Committee on Local Arrangements is working to assure comfort, convenience, and a fine time for all who attend.

I hope that veterinarians everywhere will come to Boston and participate in what promises to be one of the best AVMA meetings ever held.

s/JAMES FARQUHARSON, *President*

In planning to overcome the war-made poverty, hunger, starvation, malnutrition, and the epidemics springing therefrom, the planners have discovered that plants and animals have diseases! A radio commentator (May 27) explained at some length that scientists have discovered that rinderpest is a hindrance to oriental agriculture.

If You Did NOT Receive Your June JOURNAL — Please Read This!

Due to some circumstance, so far unexplained, a number of envelopes addressed for the June issue disappeared after they left our circulation department. Unfortunately, there is no way to determine which envelopes were lost. If members who have not received their June JOURNALS will drop us a card, copies will be mailed at once.—AVMA Circulation Department, 600 S. Michigan Ave., Chicago 5, Ill.

The 1946 Session

The eighty-third annual meeting of the American Veterinary Medical Association will be held at Hotel Statler, Boston, August 19-22, 1946. There will be executive sessions of the Association's governing bodies on Saturday, August 17, and Sunday, August 18. The first session of the House of Representatives will convene on Monday morning, August 19, at 9 o'clock; the second session will be on Monday evening at 7 o'clock.

The condensed program on page 7 is

intended as a convenient reference schedule of events and as a guide for convention-goers in timing their arrival in Boston.

Also, on the following pages will be found information regarding the arrangements for the meeting, the programs of the General Sessions and Sections, the Women's Auxiliary meeting and other functions for women, the Educational and Technical (commercial) Exhibits, meetings of related organizations, motion picture demonstrations, entertainment, and other features.

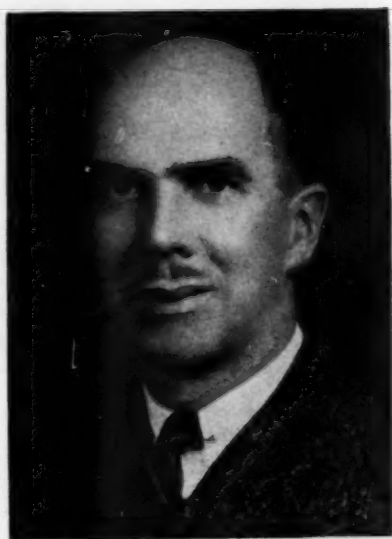
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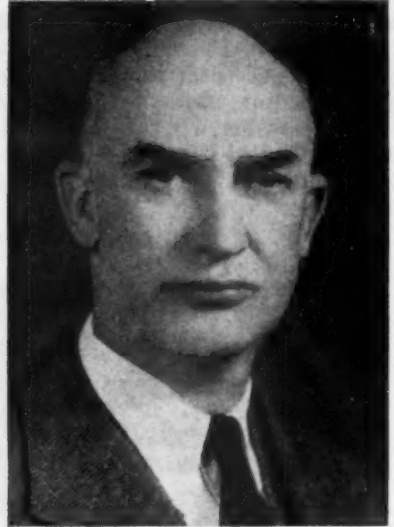


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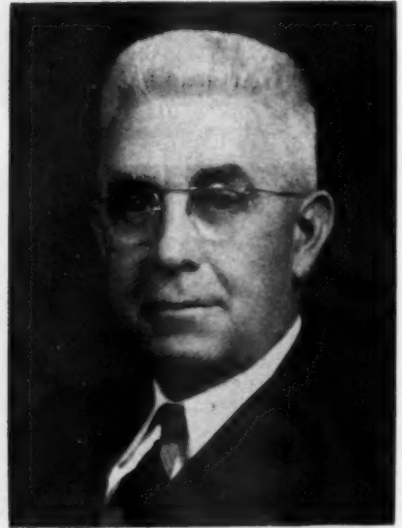
B. S. Killian, Entertainment



A. H. Russell, Exhibits

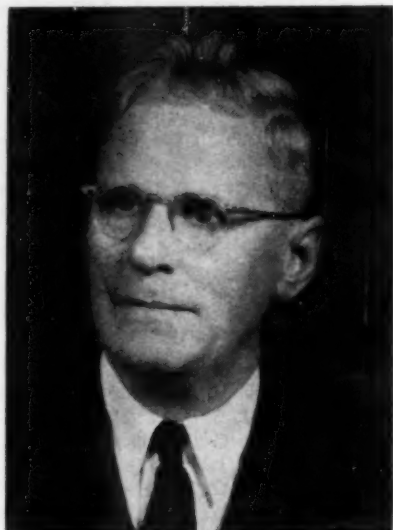


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Equipment



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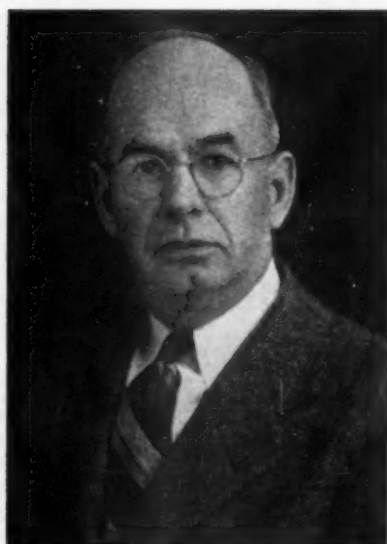
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THE BOSTON SESSION

Daily Program Schedule

Saturday, August 17

- 10:00 a.m. Board of Governors.
- 2:00 p.m. Committee meetings.
- 3:00 p.m. Committee on Local Arrangements.

Sunday, August 18

- 9:00 a.m. Executive Board, First Session.
- 10:00 a.m. Committee meetings.
- 12:30 p.m. Luncheon, Executive Board.
- 2:00 p.m. Advanced Registration.
- 2:00 p.m. Executive Board, Second Session.
- 7:30 p.m. Conference on Veterinary Licensure.
- 7:30 p.m. Executive Board, Third Session (if necessary).

Monday, August 19

- 8:30 a.m. Registration.
- 9:00 a.m. Opening of Technical (Commercial) and Educational Exhibits.
- 9:00 a.m. House of Representatives, First Session.
- 1:30 p.m. Opening General Session.
- 4:00 p.m. Informal Reception for Women.
- 5:00 p.m. Reception for Veterans of World War II.
- 7:00 p.m. House of Representatives, Second Session.
- 7:00 p.m. Council on Education.

Tuesday, August 20

- 8:30 a.m. Registration Continued.
- 8:30 a.m. Motion Pictures.
- 9:00 a.m. Exhibits Open.
- 9:00 a.m. First General Session.
- 12:30 p.m. Women's Luncheon and Entertainment, followed by Annual Meeting of Women's Auxiliary.
- 12:30 p.m. Luncheon Meeting of Student Chapter Delegates followed by Conference.
- 2:00 p.m. Second General Session.
- 4:00 p.m. Clinical Depictions.
- 5:00 p.m. Meeting of Army Veterinary Corps Officers.
- 7:00 p.m. House of Representatives, Third Session (if necessary).
- 8:00 p.m. Moonlight Cruise.

Wednesday, August 21

- 8:30 a.m. Registration Continued.
- 8:30 a.m. Motion Pictures.
- 9:00 a.m. Exhibits Open.
- 9:00 to 11:00 a.m. Section Meetings: General Practice, Sanitary Science and Food Hygiene, Research.
- 10:00 a.m. Sightseeing Tour for Women.
- 11:00 to 12:30 p.m. Third General Session.
- 12:30 p.m. Alpha Psi Fraternity Luncheon.
- 2:00 to 4:00 p.m. Section Meetings: Surgery and Obstetrics, Small Animals, Poultry.
- 4:00 p.m. Clinical Depictions.
- 7:00 p.m. Banquet.
- 10:00 p.m. President's Reception and Dance.

Thursday, August 22

- 8:30 a.m. Motion Pictures.
- 9:00 a.m. Exhibits Open.
- 9:00 to 11:00 a.m. Section Meetings: General Practice, Sanitary Science and Food Hygiene, Research.
- 11:00 a.m. Clinical Depictions.
- 12:30 p.m. Alumni Luncheons.
- 2:00 to 4:00 p.m. Section Meetings: Surgery and Obstetrics, Small Animals, Poultry.
- 4:00 p.m. Fourth General Session and Installation of Officers.
- 5:00 p.m. Adjournment.

Entertainment Program

Monday, August 19

- 4:00 p.m. Informal Reception for Women.
- 5:00 p.m. Reception for Veterans of World War II.

Tuesday, August 20

- 12:30 p.m. Women's Luncheon and Entertainment.
- 8:00 p.m. Moonlight Cruise.

Wednesday, August 21

- 10:00 a.m. Sightseeing Tour for Women.
- 7:00 p.m. Banquet.
- 10:00 p.m. President's Reception and Dance.

Thursday, August 22

- 12:30 p.m. Alumni Luncheons.

Preliminary Program - General Sessions and Sections

The custom of making the July issue of the JOURNAL the "Convention Number" serves a double purpose: The publication of the preliminary program undoubtedly stimulates interest in, and attendance at, the annual meeting; it also enables members to plan their convention trip and make hotel reservations well in advance.

As given here, the general outline of the meeting, its features, and the scientific programs of the General Sessions and Sections are as definite and fixed as circumstances permit

more than two months prior to the actual dates of the Convention. However, the exact order of papers and the arrangement of other program details may necessarily be changed somewhat in the final and official program. Also, since copy for the program as it appears here was closed on June 15, this preview of the Boston session is not complete in all respects.

If circumstances permit, abstracts of all convention papers submitted in advance will be printed and issued to those in attendance at the Convention when they register.

Opening Session

Monday, August 19, 11:30 p.m.

Music.

Call to Order by President James Farquharson.

Invocation.—Rev. Daniel J. Donovan, Executive Secretary, Holy Name Society, Archdiocese of Boston.

The National Anthem.

Address of Welcome.—Honorable Maurice J. Tobin, Governor of the Commonwealth of Massachusetts.

Response.—Dr. R. W. Smith, State Veterinarian of New Hampshire.

Greetings from Women's Auxiliary.—Mrs. H. Preston Hoskins, President, Evanston, Illinois.

Music.

Address.—Dr. James Farquharson, President.

Announcements.—Dr. E. M. Aldrich, General Chairman, Committee on Local Arrangements.

Presentation of Awards.

By Dr. W. A. Young, Chairman, Special Committee on Humane Act Award:

1946 Humane Act Award.

By Dr. James Farquharson, Chairman *ex-officio*, Committee on Awards:

Twelfth International Veterinary Congress Prize.

Deferred Presentation of 1943 AVMA Award.

Borden Award for 1946.

By Dr. C. C. Hastings, Chairman, Executive Board:

Gold Key to Incoming President.
Service Scroll to Retiring President.

4:00 p.m.

Nomination of Officers.

Informal Reception for Women.

First General Session

Tuesday, August 20, 9:00 a.m.

"So You Are a Member of the AVMA!"

H. L. Foust, Iowa State College, Ames, Iowa.

Activities of the National Research Council's Committee on Veterinary Services for Farm Animals.

R. C. Newton, Chairman, Chicago, Ill.

Observations at the Institute for Veterinary Research, Pusan, Korea.

Major Russell M. Madison, V.C., U. S. Army.

10:30 a.m.

Symposium on Antibiotic Agents.

1) The Susceptibility of Pathogenic Bacteria of Animal Origin to Penicillin.

I. A. Merchant and R. A. Packer, Iowa State College, Ames, Iowa.

2) Streptomycin and Its Possible Application in Veterinary Therapeutics.

W. H. Feldman and A. G. Karlson, Mayo Foundation, Rochester, Minn.

3) Present Status of Streptomycin.

Henry Welch and W. A. Randall, Food and Drug Administration, Washington, D. C.

12:00 Noon

Adjourn for luncheon period.

Second General Session

Tuesday, August 20, 2:00 p.m.

Public Health Administration.

Warren G. Draper, Deputy Surgeon General, U. S. Public Health Service, Washington, D. C.

Health Conditions in Western Europe.

Maj. Gen. Morrison C. Stayer, M.C., formerly

Director, Public Health and Welfare Division, U. S. Group, Control Council, Germany.

The Army Veterinary Service.

Col. James A. McCallam, Director, Veterinary Division, Surgeon General's Office, Washington, D. C.

The World Food Situation.

(Speaker to be announced. This address may be given at the banquet on Wednesday evening, August 21.)

4:30 p.m.

Clinical Depletions.

Third General Session

Wednesday, August 21, 11:00 a.m.

Peacetime Benefits from Biological Warfare Research Studies.

George W. Merck, President Merck and Co., Rahway, N. J., and formerly Special Consultant for Biological Warfare to the Secretary of War.

Experimental Wartime Studies on Rinderpest.

Richard E. Shope, Rockefeller Institute, Princeton, N. J., and formerly Commander, Medical Corps, U. S. N. R.

12:30 p.m.

Adjourn for luncheon period.

Fourth General Session

Thursday, August 22, 11:00 a.m.

The Composition of Colostrum and Its Value in Calf Raising.

T. S. Sutton, Professor of Animal Husbandry, The Ohio State University, Columbus, Ohio.

Rabies Can Be Controlled.

Alexander Zeissig, Associate Professor of Bacteriology, New York State Veterinary College, Ithaca, N. Y.

The Role of Veterinary Medicine in the Occupation of Japan (to be read by title).

Col. Oness H. Dixon, V.C., In Charge, Veterinary Affairs Division, SCAP, Tokyo.

12:00 Noon

Installation of Officers.

12:30 p.m.

Adjournment.

Meetings of Related Organizations

As in previous years, a number of organizations will hold regular or special sessions during the Boston convention. Among those that are definitely planned are the following:

Women's Auxiliary to the AVMA.—See program elsewhere.

Conference on Veterinary Licensure.—Sunday, August 18, 7:00 p.m. (This will be attended by representatives of state boards of veterinary examiners and members of the AVMA Committee on Education.)

Student Chapters of the AVMA.—Tuesday, August 20, 12:30 p.m. (Luncheon meeting followed by conference.)

Army Veterinary Corps Officers.—Tuesday, August 20, 5:00 p.m. (This is not to be confused with the reception to veterinary veterans of World War II.)

Alpha Psi Fraternity.—Luncheon, Wednesday, August 21, 12:30 p.m.

Alumni Luncheons.—Thursday, August 22, 12:30 p.m.

Alumni Association, New York State Veterinary College.—Semicentennial gathering, Thursday, August 22, 12:30 p.m.

Brief meetings may also be held of the National Association of Federal Veterinarians, the National Assembly of Chief Livestock Sanitary Officials, and Extension Veterinarians. Dates and times will be announced when arranged.

Motion Pictures

A number of motion pictures will be shown at various times throughout the meeting. It may be necessary to alter, somewhat, the schedule of "Clinical Depictions" as shown in the preliminary program in order to provide more time for some of the General Sessions and Sections. If feasible, the showing of certain films may be repeated to facilitate viewing them by as many persons as possible without conflict with other program items.

The following is a partial list of the motion pictures for the Boston session:

New Methods of Administering Drugs to Sheep.—J. H. Whitlock, New York State Veterinary College.

Operation for Eye Worm in a Horse.—J. N. Frost and D. W. Baker, New York State Veterinary College.

Swine Brucellosis.—Division of Veterinary Science, Purdue University.

An Ounce of Prevention and "Do Unto Animals."—National Livestock Loss Prevention Board.

Training You to Train Your Dog.—National Council of the YMCA.

Battling Brucellosis. Equine Infectious Anemia; Swine Erysipelas; Lathyrus Poisoning; Ergot Poisoning; Dourine.—Bureau of Animal Industry, U. S. Department of Agriculture.

The following are from the AVMA Motion Picture Library:

Meats With Approval.—(By the Meat Inspection Division, USDA, and the U. S. Office of Education.)

The Ruminant Stomach.—(By H. H. Dukes, New York State Veterinary College.)

Avian Pneumoencephalitis (Newcastle Disease).—California State Department of Agriculture.)

THE BOSTON SESSION

Section Programs Section on General Practice



F. H. Suits, Odessa, Mo., Chairman



P. V. Neuzil, Blairstown, Iowa, Secretary

First Session—Wednesday, August 21, 9:00 a.m.

Opening Remarks by the Chairman.
Report of Secretary.

Raising Heifer Calves on Mastitis Milk.
Seth D. Johnson, New York State Veterinary
College, Ithaca, N. Y.

**New Therapy of Pneumonia and Hemorrhagic
Septicemia of Cattle.**
J. L. McAuliff, Cortland, N. Y.

Some Sheep Diseases Common to Farm Flocks.
Frank Thorp, Jr., Michigan State College,
East Lansing, Mich.

10:00 a.m.

Panel Discussion on Poultry Practice.
Developed by B. S. Pomeroy, University of
Minnesota, St. Paul, Minn., Chairman of Sec-
tion on Poultry.

Moderator: Cliff D. Carpenter, Institute of
American Poultry Industries, Chicago, Ill.

F. R. Beaudette, New Jersey Agricultural Ex-
periment Station, New Brunswick, N. J.

E. M. Dickinson, Oregon State College, Cor-
vallis, Ore.

Hugh Hurst, Salt Lake City, Utah.

P. V. Neuzil, Blairstown, Iowa.

C. Harvey Smith, Crown Point, Ind.

11:00 a.m.

Adjourn for General Session.

**Second Session—Thursday, August 22,
9:00 a.m.**

Scabies in Cattle in the Northeastern States.
Donald W. Baker, New York State Veteri-
nary College, Ithaca, N. Y.

Milk Fever and Its Complications.
A. H. Craige, Jr., Towanda, Pa.

Swine Brucellosis.
L. M. Hutchings, Purdue University, Lafay-
ette, Ind.

10:00 a.m.

**Symposium on Vaccination Against Bovine
Brucellosis.**

Advantages.
L. A. Dykstra, Aurora, Ill.

Limitations.
R. R. Birch, New York State Veterinary
College, Ithaca, N. Y.

Summarization.
A. B. Crawford, Bureau of Animal Indus-
try, Beltsville, Md.

11:00 a.m.

Election of Section Officers.

11:10 a.m.

**Adjourn for General Session (or Clinical De-
pictions).**

THE BOSTON SESSION

Section on Sanitary Science and Food Hygiene



L. D. Frederick, Chicago, Ill., Chairman



W. T. Spencer, Lincoln, Neb., Secretary

First Session—Wednesday, August 21, 9:00 a.m.

Opening Remarks by the Chairman.
Report of Secretary.

The Application of Sanitary Science in the Control of Livestock Diseases.

R. L. West, State Veterinarian and Executive Secretary, Minnesota State Livestock Sanitary Board, St. Paul, Minn.

The Past, Present, and Future of Livestock Loss Prevention.

W. A. Young, Chairman, National Livestock Loss Prevention Board, Chicago, Ill.

Food Hygiene Problems of the Army Veterinary Corps.

Col. Jesse D. Derrick, V.C., U.S.A., Chief, Veterinary Service, Headquarters, First Service Command, Boston, Mass.

Veterinary Sanitary Problems of Air Transport.

Lt. Col. Benjamin D. Blood, V.C., U.S.A., Chief Veterinarian, Army Air Forces, Washington, D. C.

11:00 a.m.

Adjourn for General Session.

Second Session—Thursday, August 22, 9:00 a.m.

Studies on Liver Abscesses in Beef Cattle.

Rue Jensen and Paul R. Frey, Division of Veterinary Medicine, Colorado A. and M. College, Ft. Collins, Colo.

Panel Discussion: The Veterinarian in Public Health Work.

Moderator.—James H. Steele, U.S. Public Health Service, Washington, D. C.

V. A. Getting, Commissioner, Massachusetts State Department of Public Health, Boston.

Carlos M. Muniz, Department of Sanitation, San Juan, Puerto Rico.

Martin D. Baum, City Veterinarian, Los Angeles, Calif.

11:00 a.m.

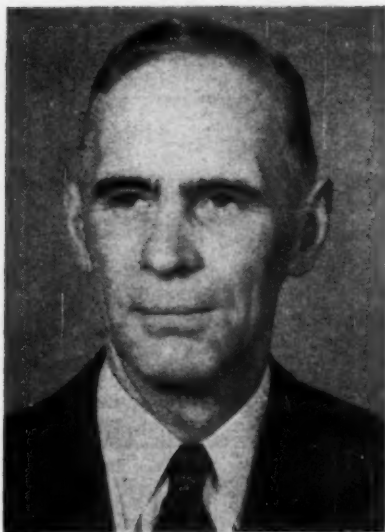
Election of Section Officers.

11:10 a.m.

Adjourn for General Session (or Clinical Discussions).

THE BOSTON SESSION

Section on Research



E. L. Stubbs, Philadelphia, Pa., Chairman



Robert Graham, Urbana, Ill., Secretary

First Session—Wednesday, August 21, 9:00 a.m.

Vaccination Studies on Bovine Trichomoniasis.
B. B. Morgan, University of Wisconsin, Madison.

Vibrionic Abortion in Cattle.
W. N. Plastridge, Storrs Agricultural College, Storrs, Conn.

The Relation of the Opsonic Index to Infection and Immunity in Bovine Brucellosis.

W. R. LeGrow, New York State Veterinary College, Ithaca, N. Y.

The Bactericidal Action of Streptomycin Against Brucella Abortus.

H. L. Gilman and W. R. LeGrow, New York State Veterinary College, Ithaca, N. Y.

Experiments with Porcine and Bovine Gamma Globulin.

H. S. Cameron, University of California, Davis, Calif.

A Physiopathologic Study of the Newborn Pig with Special Reference to Hypoglycemia.

C. C. Morrill and Jesse Sampson, University of Illinois, Urbana, Ill.

11:00 a.m.

Adjourn for General Session.

2:00 p.m.

Joint Session with Section on Poultry.

Second Session—Thursday, August 22, 9:00 a.m.

The Blood Picture in Periodic Ophthalmia.
Capt. Thomas O. Roby, V.C., and Maj. T. C. Jones, V.C., U.S. Army, Washington, D. C.

Rôle of the Thorny-headed Macracanthorhynchus Hirudinaceus in the Occurrence of Disease in Canada.

W. E. Swales and Ronald Gwatkin, Animal Diseases Research Institute, Hull, P. Q.

The Infusion of Penicillin into the Bovine Udder.

W. T. S. Thorp, Pennsylvania State College, State College, Pa.

Effect of Volume of Distilled Water as Vehicle for Penicillin in Treating Streptococcal Mastitis.

J. J. Porter and A. C. Kelman, University of Wisconsin, Madison.

The Genesis of Bovine Udder Infection. II. The Occurrence of Streptococcal Infection in a Cow Population During a Seven-year Period and its Relation to Age.

J. M. Murphy, Dairy Research Farm, Sussex, N. J.

11:00 a.m.

Election of Section Officers.

11:10 a.m.

Adjourn for General Session.

THE BOSTON SESSION

Section on Small Animals



John H. Gillmann, Memphis, Tenn., Chairman



Charles C. Rife, Atlanta, Ga., Secretary

First Session—Wednesday, August 21, 2:00 p.m.

Opening Remarks by the Chairman.
Report of Secretary.

Geriatrics in Small Animal Practice.

G. B. Schnelle, Angell Memorial Hospital,
Boston, Mass.

Canine Leptospirosis.

K. W. Smith, Colorado A. and M. College, Ft.
Collins, Colo.

Surgery of the Mammary Gland of the Bitch.

Wayne D. Riser, North Shore Animal Hos-
pital, Evanston, Ill.

3:00 p.m.

Panel Discussion on Canine Distemper.

Moderator.—C. P. Zepp, New York, N. Y.

G. B. Schnelle, Angell Memorial Hospital,
Boston, Mass.

H. C. Stephenson, New York State Veterinary
College, Ithaca, N. Y.

Armour C. Wood, Trenton, N. J.

4:00 p.m.

Adjourn for General Session.

Second Session—Thursday, August 22, 2:00 p.m.

A Practitioner's Views on Ear Diseases.

C. E. Decamp, Scarsdale, N. Y.

Some New Developments in Treating Glaucoma in the Dog.

Mason Weadon, Washington, D. C.

Recent Research in Dog Nutrition.

W. A. Krehl, Yale University, New Haven,
Conn.

3:00 p.m.

Panel Discussion on Penicillin in Small Animal Practice.

Moderator.—H. C. Stephenson, New York
State Veterinary College, Ithaca, N. Y.

James Farquharson, Colorado A. and M. Col-
lege, Ft. Collins, Colo.

David Hopkins, Brattleboro, Vt.

C. P. Zepp, New York, N. Y.

4:00 p.m.

Election of Section Officers.

4:10 p.m.

Adjourn for General Session.

If You Did NOT Receive Your June JOURNAL — Please Read This!

Due to some circumstance, so far unexplained, a number of envelopes addressed for the June issue disappeared after they left our circulation department. Unfortunately, there is no way to determine which envelopes were lost. If members who have not received their June JOURNALS will drop us a card, copies will be mailed at once.—AVMA Circulation Department, 600 S. Michigan Ave., Chicago 5, Ill.

THE BOSTON SESSION

Section on Poultry



E. M. Dickinson, Corvallis, Ore., Chairman



B. S. Pomeroy, St. Paul Minn., Secretary

First Session—Wednesday, August 21, 2:00 p.m.

(Joint Session with Section on Research)

Opening Remarks by the Chairman.

Report of Secretary.

Propagation of Infectious Bronchitis Virus in Embryonated Eggs.

C. H. Cunningham, Michigan State College, East Lansing.

Unusual Bacterial Infection in Blood of Affected Fowl-Paralysis Adult Birds.

A. J. Durant, University of Missouri, Columbia, Mo.

Antigenic Differences in Strains of Salmonella Pullorum.

Ronald Gwatkin, Animal Diseases Research Institute, Hull, P. Q.

3:30 p.m.

Symposium on Newcastle Disease.

Moderator.—F. R. Beaudette, New Jersey Agricultural Experiment Station, New Brunswick, N. J.

Isolation, Identification and Immunization Against Fowl Plague.

H. E. Moses, Purdue University, Lafayette, Ind.

Isolation, Identification, and Immunization Against Newcastle Disease.

C. A. Brandly, University of Wisconsin, Madison, Wis., and E. Elizabeth Jones, Wellesley College, Wellesley, Mass.

Differentiative Pathology of Fowl Plague and Newcastle Disease.

E. Jungherr, Storrs Agricultural Experiment Station, Storrs, Conn., and E. E. Tyzzer, Harvard University, Boston, Mass.

Discussion.—P. P. Levine, New York State Veterinary College, Ithaca, N. Y.; H. W. Schoening, Bureau of Animal Industry, Washington, D. C.; H. Van Roekel, Massachusetts Agricultural College, Amherst, Mass.

5:00 p.m.

Adjourn.

Second Session—Thursday, August 22,

2:00 p.m.

Food Particle Size and Quality in Relation to Disease in Artificially Propagated Quail Chicks.

D. R. Coburn, Patuxent Research Refuge, Bowie, Md.

The Use of Propylene Glycol as an Incubator Fumigant.

E. N. Moore, University of Delaware, Newark, Del.

The Use of Sulfamerazine and Related Sulfonamides in Outbreaks of Cecal Coccidiosis.

W. E. Swales, Animal Diseases Research Institute, Hull, P. Q.

Chemotherapy of Cecal Coccidiosis.

W. T. S. Thorp, Pennsylvania State College, State College, Pa.

Sulfonamides in Pullorum Disease and Paratyphoid Infections of Chicks and Poults.

B. S. Pomeroy, R. Fenstermacher and M. H. Roepke, University of Minnesota, St. Paul, Minn.

4:00 p.m.

Election of Section Officers.

4:10 p.m.

Adjourn for Clinical Depictions (or General Session).

THE BOSTON SESSION

Section on Surgery and Obstetrics



A. G. Danks, Ithaca, N. Y., Chairman



J. F. Bullard, Lafayette, Ind., Secretary

First Session—Wednesday, August 21, 2:00 p.m.

Opening Remarks by the Chairman.
Report of Secretary.

Lameness of the Harness Horse.

J. N. Frost, New York State Veterinary College, Ithaca, N. Y.

Teat Surgery of Cattle.

F. A. Hall, Garrett, Ind.

Endocrine Therapy in Veterinary Medicine.

F. N. Andrews, Purdue University, Lafayette, Ind.

Breeding Problems of Thoroughbreds.

Speaker to be announced.

4:00 p.m.

Adjourn for Clinical Depictions.

Second Session—Thursday, August 22, 2:00 p.m.

Rumenotomy of the Dairy Cow.

E. C. Moore, Lewiston, Maine.

Torsion of the Uterus and Cesarean Section.

L. A. Gendreau, Sherbrooke, P. Q.

2:50 p.m.

Panel Discussion on Artificial Insemination.

Moderator—R. C. Klussendorf, Chicago, Ill.

J. A. Henderson, University of Illinois, Urbana, Ill.

J. C. Ramge, Celina, Ohio.

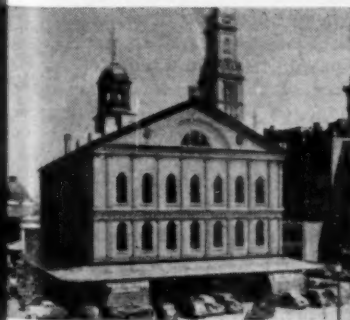
J. G. Hamilton, Clinton, N. J.

4:00 p.m.

Election of Section Officers.

4:10 p.m.

Adjourn for Clinical Depictions (or General Session).



Faneuil Hall, Cradle of Liberty, Boston



U. S. Frigate Constitution, Boston



Minute Man Monument, Lexington

BOSTON SESSION

Officers of the American Veterinary Medical Association 1945-1946

President—JAMES FARQUHARSON, Fort Collins, Colo.
President-elect—B. T. SIMMS, Washington, D. C.
1st Vice-President—W. A. BARNETTE, Greenwood, S. Car.
2nd Vice-President—C. R. DONHAM, Lafayette, Ind.
3rd Vice-President—M. O. BARNES, Olympia, Wash.
4th Vice-President—F. H. SUITS, Odessa, Mo.
5th Vice-President—J. A. CAMPBELL, Toronto, Ont.
Executive Secretary—J. G. HARDENBERGH, Chicago, Ill.
Assistant Executive Secretary—R. C. KLUSSENDORF, Chicago, Ill.
Treasurer—J. V. LACROIX, Evanston, Ill.

Executive Board

Member-at-large—C. C. HASTINGS, *Chairman*, Williamsville, Ill. (1947)
1st District—A. E. CAMERON, Ottawa, Ont. (1947)
2nd District—S. F. SCHEIDY, Drexel Hill, Pa. (1948)
3rd District—J. L. AXBY, Indianapolis, Ind. (1948)
4th District—B. E. CARLISLE, Camilla, Ga. (1949)
5th District—C. C. FRANKS, Des Moines, Iowa (1950)
6th District—L. M. HURT, Sierra Madre, Calif. (1946)
7th District—E. E. WEGNER, Pullman, Wash. (1950)
8th District—ASHE LOCKHART, Kansas City, Mo. (1946)
9th District—W. A. HAGAN, Ithaca, N. Y. (1947)
10th District—W. R. KRILL, Columbus, Ohio (1949)
Ex officio—JAMES FARQUHARSON, Fort Collins, Colo.
Ex officio—B. T. SIMMS, Washington, D. C.
Board of Governors, *ex officio*—C. C. HASTINGS, *Chairman*; JAMES FARQUHARSON,
B. T. SIMMS.



President-Elect B. T. Simms

Executive and Legislative Sessions

Board of Governors.—Saturday, August 17,
10:00 a.m.

Executive Board.—Sunday, August 18, 9:00 a.m.
and 2:00 p.m. Also 7:30 p.m. if necessary.

House of Representatives.—First session, Monday morning, August 19, 9:00 a.m. Second session, Monday evening, August 19, 7:00 p.m. If a third session is required, it will be held on Tuesday evening, August 20, at 7:00 p.m.

Election and Installation of Officers.—Because the 1945 annual meeting was a business session only of the governing bodies of the Association, the officers elected for 1944-1945 were held over for 1945-1946. At the Boston meeting, nominations for the following elective offices will take place at the end of the Opening General Session on Monday afternoon, August 19:

President-Elect
Five Vice-Presidents
Treasurer

If a ballot election is required on account of more than one nomination for the respective offices, polls will be set up in the executive secretary's office on Tuesday, August 20.

President-Elect B. T. Simms will be installed as President at the final General Session on Thursday, August 22, along with other officers elected at this session.

Women's Activities, Including the Women's Auxiliary

Message from the Chairman of the Women's Activities Committee

The women of Boston and vicinity look forward with real pleasure to helping entertain the Women's Auxiliary to the AVMA and all wives of veterinarians who will be attending the 1946 session. All women are cordially in-



Mrs. J. J. Murphy, Jr.

vited and urged to attend the colorful opening ceremony at 1:30 o'clock Monday afternoon, August 19, and the informal reception for women which will follow at 4:00 p.m.

Please register early and obtain your badge, program, and tickets which will be issued for the various women's functions at the Registration Desk.

There will be an information desk for women and the Women's Auxiliary on the mezzanine floor of the Hotel Statler near the main registration desk. A women's lounge and rest room has also been provided just off the Ballroom Assembly on the mezzanine floor.

The Committee on Local Arrangements has planned a number of events especially for the women, and it is our hope that you will attend all of them. The members of our committee will be identified by "hostess" badges and will be happy to assist you in every way.

Cordially,

MRS. J. J. MURPHY, JR., *Chairman
Committee on Women's Activities.*

Message from the President of the Women's Auxiliary

Under the direction of Mrs. Anthony E. Bott, program chairman, and with the collaboration of Mrs. J. J. Murphy, Jr., local chairman of women's activities, plans are being made for the annual meeting of the Women's Auxiliary in Boston. Since no regular meeting was possible in 1945, and because 1946 is the twenty-fifth anniversary of the establishment of the Student Loan Fund, the session this year is especially significant and should be a most in-



Mrs. H. Preston Hoskins

teresting one. The fund continues in operation and is available to senior students in accredited veterinary colleges in the United States and Canada.

The leaflet, "The Veterinary Profession and Its Services to the Public," which was prepared by the Auxiliary early in the year as an initial public relations activity, has been sent to the wives of more than 7,000 veterinarians. It has brought a gratifying response, both in interest and in applications for membership in our organization.

This is the first time that the Women's Aux-

iliary to the AVMA has met in Boston. With so many things to see and to hear and to talk about, we anticipate an unusually happy and interesting meeting.

Are you going?

Cordially,

MRS. H. PRESTON HOSKINS, *President
Women's Auxiliary to the AVMA.*

Women's Program

Sunday, August 18

2:00 p.m. Registration of early arrivals.
Evening Open.

Monday, August 19

8:30 a.m. Registration.
9:00 a.m. View Educational and Technical Exhibits.
1:30 p.m. Attend Opening Session.
4:00 p.m. Informal Reception tendered by Local Committee on Women's Activities.
Evening Open.

Tuesday, August 20

Morning Open.
12:30 p.m. Women's Luncheon and Entertainment, Copley Plaza Hotel.
2:00 p.m. Annual Meeting, Women's Auxiliary.
8:00 p.m. Moonlight Cruise (for men also).

Wednesday, August 21

10:00 a.m. Sightseeing Tour.
7:00 p.m. Banquet.
10:00 p.m. President's Reception and Dance.

Thursday, August 22

Morning Open for shopping.
12:30 p.m. Alumni Luncheons.
Afternoon Open.

Hotel Accommodations

On recommendation of the Boston Convention Bureau and the Hotel Association, an AVMA Housing Bureau has been set up by the Committee on Local Arrangements. All reservations will be cleared through the Housing Bureau.

For convenience in making reservations, a list of the principal hotels in Boston which have set aside blocks of rooms for AVMA Convention week, together with a reservation blank, have been printed in the JOURNAL for the past three months. A similar blank appears on advertising page xlvi of this issue.

It is important that reservations be made by August 1, 1946, and that the date and ex-

pected time of arrival (morning, afternoon, evening) be indicated.

The Housing Bureau will issue confirmations of hotel accommodations. Any requests or inquiries should be addressed to AVMA Housing Bureau, c/o Convention Bureau, Chamber of Commerce, 80 Federal Street, Boston 10, Mass. Any special inquiries may be directed to the chairman of the Committee on Hotels and Housing, Dr. W. H. Shannon, 15 Clematis St., Dorchester 22, Mass.

Garages and Parking.—Those who will be driving to Boston may drive directly to their hotel and leave their automobile in the care of the doorman or garage attendant. Each hotel operates its own pick-up and delivery service. Parking space is also available within a few blocks of each hotel.

Registration

Advanced registration will open on the mezzanine floor of the Hotel Statler at 2:00 p.m., Sunday, August 18, to accommodate officers, delegates, exhibitors, and other early comers. Beginning Monday morning, August 19, the registration desk will be open from 8:30 a.m. to 5:00 p.m. daily.

To facilitate registration, an effort will be made this year to prepare badges in advance for those who have made their hotel reservations sufficiently early, and who have indicated the persons expected to be in their party.

Who May Register.—Members and other graduate veterinarians and their wives and children, invited guests, and exhibitors may register and take part in the convention activities.

Members, guests, and women will pay a registration fee of \$3.00 each. All children who attend the various features of the program will also be required to register and pay the regular fee.

AVMA members of the armed forces in uniform will not be required to pay but will be expected to register. Members of student chapters may also register without charge by presenting membership cards for identification.

Badges.—Distinctive badges will be issued as follows: Members, blue bar; Guests, red bar; Exhibitors, green bar; Women, rose colored badge.

Admission to exhibits, general sessions, and sectional meetings will be by badge only.

Educational Exhibits

VETERINARY CORPS, U. S. ARMY

The activities of the Army Veterinary Corps in World War II will be highlighted in this exhibit. Meat and dairy inspection, service with animal units, and research studies will be portrayed by means of photographs in black and white and in color, charts, projected color slides, and equipment. (See p. 97 for article describing Veterinary Corps exhibit for AMA Convention at San Francisco, which will also be shown at the Boston Meeting.)

NATIONAL SOCIETY FOR MEDICAL RESEARCH

The National Society for Medical Research, which was recently organized to carry on a public educational program regarding the benefits of research conducted on animals, will portray some of the recent advances pertaining to canine medicine and diseases such as dosage and effect of overdosage of the sulfonamides, selective action of penicillin and streptomycin, treatment of heart worms, liver function studies, dietary requirements, and blood transfusions.

The AVMA is one of the charter member organizations of this newly founded society and is represented on its board of directors. Dr. A. J. Carlson, of the University of Chicago, is chairman and Dr. A. C. Ivy, of Northwestern University, is secretary-treasurer.

DRS. RUE JENSEN AND PAUL R. FREY, COLORADO A. AND M. COLLEGE

Exhibit portraying results of extensive experiments conducted during the past two years on the development of telangiectasis, "saw dust," and abscesses in the livers of beef cattle, and their relations to diminution of vitamin A reserves in the liver. Specimens, photographs, and charts will illustrate the findings in cattle in which abscesses have developed in significant numbers both in feed lots and on the range.

DRS. C. R. DONHAM, L. P. DOYLE, L. M. HUTCHINGS, and H. D. JAMES, PURDUE UNIVERSITY

This exhibit will portray by photographs and charts the results of research studies on swine brucellosis and swine dysentery.

DR. D. W. BAKER, NEW YORK STATE VETERINARY COLLEGE

Exhibit showing results of recent studies on various types of mange encountered in severe outbreaks in dairy herds in New York and other northeastern states.

DR. H. L. FOUST, CHAIRMAN, SPECIAL AVMA COMMITTEE ON POSTWAR PLANNING

Dr. Foust is planning an exhibit to illustrate the trends in the veterinary personnel situation over the past several decades as influenced by various factors and to show how the current personnel situation may affect the future availability of trained veterinary service.

DR. L. MEYER JONES, IOWA STATE COLLEGE

An exhibit showing results of two years' experimental studies on sulfonamide therapy of calf pneumonia, conducted at the University of Minnesota as an AVMA Research Council Fellowship project.

AVMA PUBLIC RELATIONS DEPARTMENT

This exhibit will portray the public educational program conducted the year around through the radio, newspapers, and farm and livestock journals, informing the public and animal growers on the many aspects of veterinary service as related to livestock health, public health, food sanitation, and other work of the veterinarian.

THE BOSTON SESSION

Technical (Commercial) Exhibits

Thirty-eight firms are represented in the Technical Exhibits at Boston,—a new record for the number of exhibitors for this feature of AVMA conventions. The exhibits are not only colorful but of real interest and value to the hundreds of veterinarians in attendance.

The following brief descriptions tell something of the products that will be displayed by the manufacturers. In addition, a number of them have furnished special copy for their advertisements in this "Convention Number" of the JOURNAL. Attention is invited to the advertising pages of this issue which contain announcements of our regular clients as well as several new ones.

The exhibits will be open from 9:00 a.m. to 5:00 p.m., daily, from August 19 through 22 and will be conveniently located so that they may be visited at various times every day.

ABBOTT LABORATORIES

Such popular Abbott products as Nembutal, Pentothal Sodium, Tincture Meta-phen, Prepared Intravenous Solutions, Sulfathiazole Cream, Penicillin Specialties, Sulvetil, and Abbott Vitamin Products will be on display. Abbott Laboratories extends a cordial invitation to all veterinarians to make the Abbott booth headquarters during the week of the convention.

AMERICAN OPTICAL COMPANY

The Scientific Instrument Division of the American Optical Company will exhibit a new, pocket-sized hemoglobinometer, known as the Hb-Meter. Independent of laboratory equipment, it can be used for on-the-spot measurements of hemoglobin concentration. The "Bright-Line" Haemacytometer and several standard microscopes of Spencer quality will also be shown.

ARMOUR AND COMPANY

The Armour and Company Veterinary Division exhibit will feature a number of Armour's unique and proprietary products. Among these featured products will be surgical sutures and glandular products. The principal products of this Division, Armour's "Fowler Brand" hog cholera antiserum and hog cholera virus, will likewise be prominently displayed.

BECTON, DICKINSON & Co.

Featured in the Becton, Dickinson & Co. exhibit will be the latest developments in veterinary specialty items, particularly syringes and needles. Mr. Lou C. Mourey will be in charge of the exhibit and will be pleased to answer questions concerning the company's products.

BILHUBER-KNOLL CORPORATION

Welcome to Booth 24—Convention headquarters of Bilhuber-Knoll Corporation. Drop in and talk over Bilhuber dependable and useful every day original medicinal chemicals: Metrazol—the central nervous system stimulant; Tannalbin—the intestinal astringent; Lenigallol—local therapy for skin diseases; Calciphos—easily assimilable calcium and phosphorus; and other tried and proven veterinary drugs.

CAMPBELL X-RAY CORPORATION

Campbell X-Ray Corporation of Boston will exhibit the New 1946 Model X-Ray Animagraph. This outfit, designed specifically for the exclusive use of the veterinarian, provides complete fluoroscopy, radiography, and skin therapy both in and away from the hospital.

COMSTOCK PUBLISHING COMPANY, INC.

The Comstock exhibit will be concerned with Comstock publications in veterinary medicine, both text and reference. Sample copies of the *Cornell Veterinarian*, which will be published by the Comstock Publishing Co., Inc., beginning July 1, will also be available.

THE CORN STATES SERUM COMPANY

The exhibit of The Corn States Serum Company, Omaha, will consist of their biological products and line of specialties, including a display of Grogan Kennels.

CURTIS-FOLSE LABORATORIES

A background of the firm's label, with pharmaceuticals and instruments arranged for inspection, is the plan of the Curtis-Folse Laboratories' exhibit.

CUTTER LABORATORIES

Cutter Laboratories will present biologicals, featuring BTV (Boynton's Tissue Vaccine) for hog cholera. Also on display will be intravenous solutions, penicillin specialties, and vacuum blood transfusion equipment.

EISELE & COMPANY

Eisele & Company will exhibit their complete line of Green hypodermic syringes. They will also show their new self-sterilizing veterinary clinical thermometer. They hope all their old friends in the veterinary profession will visit their booth.

FORT DODGE LABORATORIES, INC.

The Fort Dodge exhibit will feature the new antibiotics, including penicillin sodium, penicillin with beeswax and oil, oral tablets of penicillin calcium, etc. Sulfanidol, for treatment of bovine mastitis; Chlor-Mercapto, for mange and "summer itch"; Bisuldex, for parenteral treatment of the pneumonia-enteritis complex of swine and bovine pneumonia; and other timely and up-to-date Fort Dodge pharmaceutical and biological products will also be displayed.

GENERAL ELECTRIC X-RAY CORPORATION

General Electric X-Ray Corporation, manufacturers of a complete line of diagnostic shock-proof x-ray apparatus, with branches in all principal cities, will exhibit a portable x-ray unit for veterinarians. Stader splints for external bone fixation will be demonstrated, as well as other allied products.

GOSHEN LABORATORIES, INC.

The Goshen Laboratories display will comprise products manufactured by Goshen Laboratories, Inc., as well as those manufactured by Ciba Pharmaceutical Products, Inc., Summit, N. J. The ones most apt to interest the veterinarians are Ciba's male and female hormones, Perandren and Di-Ovocylin, also Coramine and Trasentine, along with Goshen's Skin Ease, Foot Rot Ointment, Goshen Mineral-Yeast, Cu-Ti-Balm.

HAYER-GLOVER LABORATORIES

An array of practice requirements of interest to the general practitioner, including the newer listings of biological products, pharmaceuticals and instruments, will be on display at the Hayer-Glover exhibit. As usual, two booths will be utilized to accommodate the varied offerings of this firm. An illuminated background for the exhibit should be especially attractive, and sufficiently inviting to encourage the friendly contacts made possible at the national meeting.

HILL PACKING COMPANY

Hill Packing Company, processors and packers of Hill's Fresh Frozen Chopped Horse-Meat, which is produced under U. S. Government veterinary inspection, will have a display booth at which company representatives will welcome old acquaintances and new friends.

JENSEN-SALSBERY LABORATORIES, INC.

Jensen-Salsbery Laboratories, Inc., will exhibit surgical supplies, including syringes, bleeding and blood-testing equipment, and operating instruments of the most popular patterns. As to pharmaceuticals, the firm will feature hormones, vitamin preparations, new calcium solutions for hypodermic use, including calcium borogluconate, and magnesium borogluconate. On exhibit from the Jen-Sal biological department will be the new type of sealed container.

KELLOGG COMPANY

Gro-Pup Dog Food will be featured at the Kellogg booth. Details covering Gro-Pup ingredients and feeding instructions will be covered by the Kellogg representatives at the exhibit.

LEDERLE LABORATORIES, INC.

Lederle Laboratories, Inc. will show their complete line of biological and pharmaceutical products. Special emphasis will be placed on outstanding products such as sulfaguanidine, canine distemper vaccine, virus and serum, feline distemper products, blackleg bacterin combinations, Veticillin and Veta-Diazine. The exhibit will focus attention on an airplane view of the Pearl River (New York) laboratories, the largest and most outstanding in the country.

ASHE LOCKHART, INC.

Ashe Lockhart, Inc. will exhibit biological products, including antiserums, vaccines, bacterins, toxoid and diagnostic agents. Specimens and photographs of educational value also will be on view.

MERCK & Co., INC.

The Merck exhibit will feature penicillin and its uses in veterinary medicine. Canex, the specific for demodectic mange in dogs, will also be displayed, together with Lentin, sulfonamides, and other drugs commonly used by the veterinarian in the treatment of diseases of animals.

NORDEN LABORATORIES

Norden Laboratories of Lincoln, Nebraska, will display a full line of veterinary instruments and products, featuring chemically-killed, alum-precipitated bacterins; laboratory-controlled pharmaceuticals, including a selection of calcium products for every need, and the latest in DDT specialties; and "The Laughing Pig" protected by Norden triple-tested serum and virus.

ORTHO PHARMACEUTICAL CORPORATION

The exhibit of Ortho Pharmaceutical Corporation will present to the veterinary profession the product, Pre-Servisal, the new scientific approach to infertility problems in the cow. The result of research studies sponsored and conducted by Ortho Pharmaceutical Corporation, Pre-Servisal has been tested practically in the field and found to be most effective in cases where the breeding difficulty is associated with no infectious disease or organic obstruction in either the male or female.

PITMAN-MOORE COMPANY

Pitman-Moore Company, a division of Allied Laboratories, Inc., will give prominence in its exhibit to products developed by its research department, including Parenteral Solution Di-Sulfalac, combining sulfathiazole, sulfapyridine and supportive nutrients; Tablets Teniathane, a new idea in canine teniaticides; and Mercaptocaine Creme, a combination external parasiticide and local anesthetic.

THE QUAKER OATS COMPANY

The exhibit of Ken-L-Products Division of The Quaker Oats Company will feature Ken-L-Biskit as in the past, also Ken-L-Meal. In view of the shortage of dog food ingredients and other problems confronting the industry today, our representatives at the convention will be glad to give all interested veterinarians an up-to-date picture of the dog food business.

RALSTON PURINA COMPANY

The Ralston Purina Company exhibit will further emphasize their current veterinary magazine advertising program, which points out the distinctive fields of service of the veterinary profession and the Purina organization.

RANDALL FAICHNEY CORPORATION

The Randall Faichney Corporation will exhibit a complete line of veterinary syringes, needles, and specialties. Randall Faichney was one of the pioneer developers of needles and syringes for the veterinary trade, and the "Viking" mark is known the world over.

SCHENLEY LABORATORIES, INC.

The Schenley Laboratories' exhibit will be devoted entirely to Penicillin and Penicillin products. A series of transilluminated Kodachromes of various pyogenic skin infections shows the therapeutic efficiency of Penicillin Ointment Schenley. A well-informed attendant will gladly discuss any phase of penicillin therapy and developments with interested veterinarians.

SHARP & DOHME, INC.

Sharp & Dohme will exhibit their pharmaceutical and biological products. These will include some of the newer sulfonamides, lyophilized (desiccated) Brucella abortus vaccine, "Hypobeta," and new preparations of tyrothricin. Numerous other products of interest to both large animal and small animal practitioners will be on display.

R. J. STRASENBURGH Co.

Sixty years of pharmaceutical research in the service of veterinary medicine has produced many outstanding products under the R. J. Strassenburgh Co. label. These will be on display and full information may be obtained at the Strassenburgh exhibit.

SWIFT & COMPANY

After an absence of four years because of wartime restrictions, Swift & Company again will have a colorful and informative display at the association's annual meeting. The exhibit will feature Pard, the nutritionally balanced dog food.

THE UPJOHN COMPANY

The Upjohn Company exhibit will consist of three sections. The first will show, by photographs, the action of Gonadogen, gonadotropic hormone of pregnant mares' serum. The second will feature Zylate, a benzyl benzoate preparation. The third section will display vitamin products applicable in veterinary medicine. Descriptive leaflets, reprints, and suitable samples will be available for distribution.

U. S. VITAMIN CORPORATION

U. S. Vitamin Corporation will show anatomical vitamin- and mineral-deficiency charts of the horse and dog, along with Chevinal, a vitamin-mineral supplement for horses in training, and Pervinal, a vitamin-mineral supplement for small animals. Samples and literature will be distributed.

VITAMINERAL PRODUCTS COMPANY

The exhibit of Vitamineral Products Company will feature the value of the supplemental feeding of Via-D-Mineral, Con-O-Mineral and Viaferm, with their contents of calcium, phosphorus, trace minerals, iodine, and vitamins. The exhibit will furnish veterinarians with a number of pointers on livestock and poultry nutrition.

WHITE LABORATORIES, INC.

White Laboratories of Newark, New Jersey, will introduce a new line of veterinary specialties in Booth Number 25. The new products will be a co-precipitated ferrous complex; a low surface tension lethane-rotenone preparation; a water-soluble sulfonamide-tyrothricin; and a washable base ointment utilizing the natural vitamins A and D.

WILSON & Co., INC.

Ideal Dog Food will again be displayed by Wilson & Co., Meat Packers. Emphasis will be given to the fact that dehydrated Ideal is "canned Ideal without the can." Samples of reconstituted Ideal will be included as part of display to demonstrate the meaty appearance of the dog food in its feeding form. Ideal Kibbles, Meal, and Dog Cakes will also be shown.

WINTHROP CHEMICAL COMPANY, INC.

The Winthrop Chemical Company, Inc. will exhibit some of their original, synthetic, pharmaceutical contributions in the field of veterinary surgery and medicine. Among the products to be featured are Neoprontosil, the injectable sulfonamide; Novocain, the first procaine hydrochloride for local anesthesia; Istizin, a non-gripping effective laxative; Nemural and Fuadin—tapeworm and heartworm treatments, respectively. In addition, the company will display Distemperoid Virus (Fromm Laboratories), for the one injection method of immunizing dogs against distemper, and for therapeutic use in the treatment of early distemper.

The Veterinary Status of Greece and UNRRA Aid in 1945

MARTIN M. KAPLAN, V.M.D., M.P.H.

Athens, Greece

IN HEROIC sacrifice and significant contribution to the victory of the Allies, Greece was conspicuous among the United Nations, despite her size and relative lack of resources. As a result of her devastating losses during the struggle, every aspect of Greek economy stood in urgent need of relief and rehabilitation, and for these purposes the UNRRA Greece Mission was organized.

Livestock is the backbone of the predominantly agricultural economy of Greece, and one of the fundamental approaches to the restoration of the country is in the replenishing of depleted stock in conjunction with livestock-disease control. It is esti-

cent; donkeys, 22 per cent; mules and horses, 50 per cent. In an already poor country, these serious losses become staggering.

ANIMAL SHORTAGE FAR-REACHING

The vicious cycle of fewer animals, less land cultivation, and less food completes and perpetuates itself. This gloomy picture became still darker from the severe drought in the spring and summer of 1945; a world shortage of livestock feed and commodities in general; limited shipping facilities; an almost completely disrupted internal transport system; and a rampant livestock-dis-



Fig. 1—UNRRA mules corralled in Kavalla, Macedonia. These mules were bought from the British army in Italy. Greek farmers like the small mules used by the British army. The large mules of the United States Army in Italy were sent by UNRRA to Yugoslavia.

ated that, as a result of the war and occupation, Greece suffered the following reductions in livestock population: cattle, 40 per cent; sheep, 28 per cent; goats, 35 per cent; swine, 13 per cent; poultry, 25 per

cent; donkeys, 22 per cent; mules and horses, 50 per cent. In an already poor country, these serious losses become staggering.

The dearth of professional men capable of dealing with the complex problems of animal diseases is crucial and will be considered first.

There are, at present, 160 qualified veterinarians in Greece. One hundred of these

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are employed by the Ministry of Agriculture for general livestock-disease control, 36 are in the Greek Army, 11 are employed by the Ministry of Interior for food sanitation inspection in the Athens area, and the rest are private practitioners. Each category will be considered separately.

A) PRIVATE PRACTITIONERS

Nearly all veterinarians in Greece are to some extent private practitioners. Those employed by the Ministry of Agriculture and the Ministry of Interior are allowed to practice privately, in addition to their official duties. This privilege is also afforded to veterinarians in the Greek army. The reason for this is the insufficient income of most state employees. For the most part, private practice is confined to the larger urban centers like Athens and Salonika.

B) GREEK ARMY VETERINARIANS

The work of the veterinary officers in the Greek army involves only equine animals used for transport purposes. The small

amount of private practice these officers undertake in addition to their army responsibilities contributes very little to the veterinary services in Greece.

C) THE MINISTRY OF AGRICULTURE

The Division of Livestock falls under the jurisdiction of the Ministry of Agriculture. The director of this division is usually a veterinarian, although at the present time he is an agriculturist. Only 75 of the 100 veterinarians employed by the Ministry work in the field. The remaining number is concerned with administrative and laboratory activities.

All the qualified veterinarians in Greece were trained in foreign countries, mostly in France and Belgium. After finishing their studies abroad, most of them had little access to the latest developments in veterinary medicine, and during the five years of war and occupation there was an almost complete scientific blackout.

Most of the regional veterinarian's activities must, of necessity, be devoted to inoculation procedures, recognition of the



Fig 2—Brown Swiss heifers imported to Greece from the United States.

epizootic diseases, and disinfection. Before the war, these men had to supply their own instruments and drugs; only vaccines were supplied by the Ministry. Clinical diagnosis and practice with individual animals were pursued to a very small extent and, consequently, these arts were developed little beyond the experience gained in veterinary school.

Over one-third of the veterinarians are well along in years, which severely handicaps the performance of their daily duties. Salaries are relatively low and other sources of income are usually tapped. A half day is usually spent on official duties, allowing the remaining time for private practice or other enterprises. Thus, very few professional man-hours are devoted to the care of approximately 578,000 cattle, 47,000 buffaloes, 5,827,000 sheep, 2,868,000 goats, 199,000 horses, 91,000 mules, 313,000 donkeys, 376,000 pigs, and 8,290,000 poultry.

The regional veterinarian is responsible also for the meat inspection of his area. Although there are fairly adequate laws in Greece for food sanitation, they are rarely enforced as the regional veterinarian has no time to carry out his food inspection responsibilities properly. The public health ramifications of this failure are highly important and will be considered in a separate communication.

The situation in northern Greece is illustrative of the difficulties under which the regional veterinarian labors. In the Thrace-Macedonia region, from Kavalla north to the Bulgarian border and east to the Turkish border, there is encompassed a highly mountainous area of about 3,500 square miles. The livestock population consists of approximately 88,000 cattle and buffaloes, 25,000 equine animals, 420,000 sheep, 315,000 goats, 13,000 swine, and 650,000 poultry. Numerous enzootic dis-

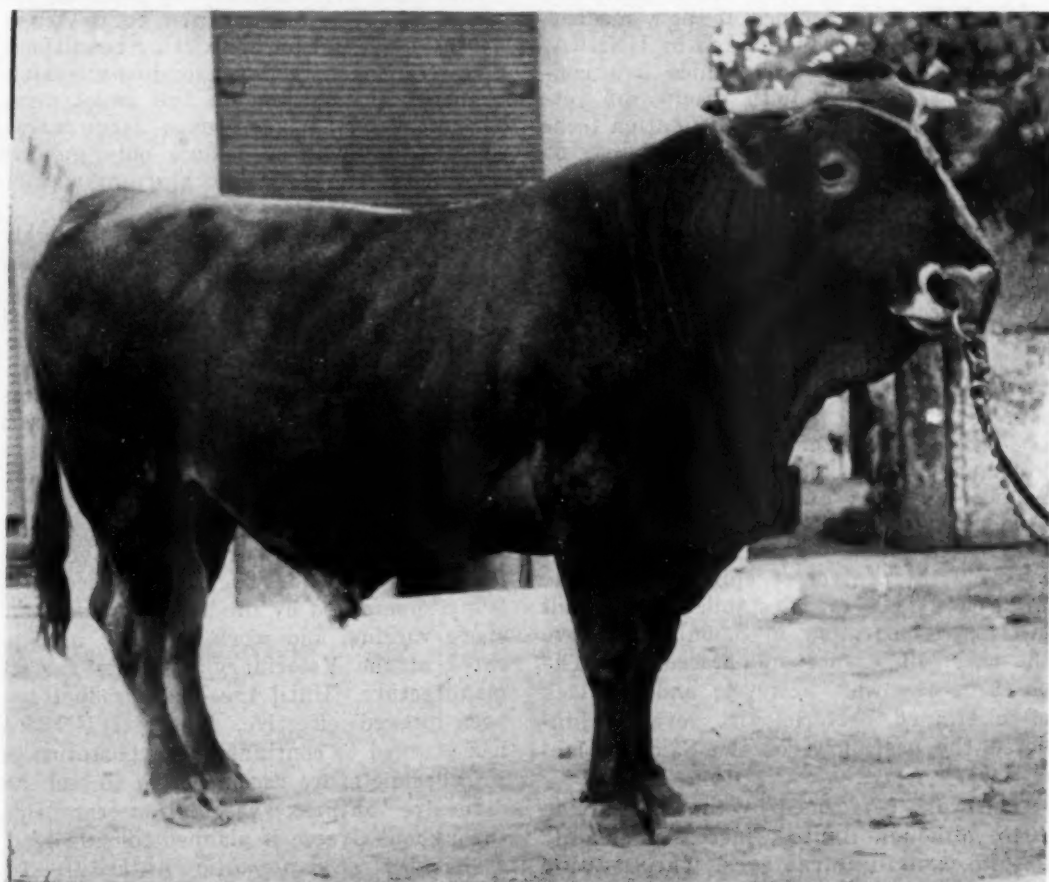


Fig. 3—One of the pedigree Brown Swiss bulls imported for artificial insemination purposes.

eases are prevalent among these animals, including foot-and-mouth disease, sheep pox, anthrax, blackleg (symptomatic anthrax), "struck," and piroplasmosis. To cope with these problems, and facing the additional disadvantages of very poor communication and transport facilities, there are only four veterinarians, three of whom are over 50 years of age.

UNRRA's first material contribution to veterinary rehabilitation was the dispatch of units of drugs and equipment to every state-employed veterinarian in the field. Quantities of drugs were also placed at the disposal of all full- or part-time private practitioners. Expendable materials were constantly replaced and supplemented as shipments of supplies arrived.

In addition to drugs, instruments, and general supplies, UNRRA has been issuing periodic communications, translated into Greek, which are sent to all Greek veterinarians. These communications concern recent advances in veterinary medicine, particularly in reference to new medicaments and methods introduced by UNRRA. Frequent seminars and clinics are conducted by UNRRA with groups of veterinarians, and artificial insemination technicians are newly trained by specialists of the Near East Foundation.

To overcome the basic deficiency of too few veterinarians, UNRRA is encouraging a plan of the Ministry of Agriculture for the establishment of a veterinary school. This project will give no immediate relief to the pressing veterinary problems, but its ultimate contributions will far overshadow any temporary aid from outside sources.

Control of Communicable Diseases.—The Veterinary Microbiological Institute in Athens performs diagnostic services, and produces serums and vaccines which are distributed to the regional state veterinarians for the control of epizootic diseases. In 1939, there was established a small diagnostic laboratory in Salonika to serve the needs of Thrace and Macedonia. The onset of the war, however, and the lack of a trained bacteriologist severely hindered the usefulness of the Salonika laboratory.

The work performed by the Institute in 1945, although limited, increased steadily despite many disadvantages. The Institute is understaffed and equipment is badly

worn and insufficient in quantity. A lack of laboratory and large animals for serum and vaccine production, and an unreliable supply of electricity and water have hampered operations considerably.

UNRRA has given close attention to the needs of the Institute. Materials and facilities necessary to continue and increase production have been supplied. Stock cultures of bacteriologic strains lost during the war have been replaced, and partial restoration of the library with past and current veterinary literature was accomplished. As later discussion under specific communicable diseases will indicate, the production of improved biological products has been started. Furthermore, it is planned to send two members of the Institute's staff to England and the United States early in 1946 to study for several months the technical advances in bacteriology, parasitology, pathology, and production of biological preparations.

Statistics of communicable diseases reported by veterinarians are not a trustworthy presentation of existing conditions. Poor transport facilities and inaccessible localities, in addition to the small number of veterinarians, leave large areas without supervision. Thus, only general statements will be made concerning specific diseases.

Anthrax.—The soil of Greece is highly contaminated with anthrax spores because of the improper disposal of infected carcasses. The anthrax vaccine formerly used here was a modified Pasteur vaccine. Results from this vaccine were not too satisfactory, as its potency was of short duration and the degree of immunity conferred was variable. UNRRA imported by air a half-million doses of subcutaneous spore vaccine with saponin, manufactured in the Kabete Laboratory, Kenya, South Africa, and this vaccine has proved to be very effective in the field. The Kabete vaccine is being superseded by the use of intradermic spore vaccine, and work is being inaugurated at the Veterinary Institute for its manufacture. Until the local product has been proved effective, however, UNRRA has planned to continue the importation of intradermic spore vaccine from abroad. An extensive anthrax vaccination campaign throughout Greece is planned for 1946.

Blackleg (Symptomatic Anthrax).—Infection with this disease is not as preva-

lent as anthrax, but many districts suffer greatly. An effective formalinized bacterin (killed culture) is produced by the Veterinary Institute.

Foot-and-Mouth Disease.—Persistent outbreaks of this disease occur in Thrace. In Greece, the disease assumes a benign form. Although the mortality is low, economic losses are great because of the stoppage of milk flow and secondary infections of the feet which result in chronic lameness. In the past, when an epizootic of this disease appeared, it was the custom to inoculate all susceptible cattle in the vicinity by the antiquated method of rubbing the dental pad with a rough cloth containing the saliva of infected animals. The virus was never typed and no vaccines were used.

UNRRA has arranged for the importation from Switzerland of the Waldmann vaccine which has been extensively and successfully used in European countries. The handling of this vaccine involves great difficulties because of the necessity for keeping it within the temperature range of 2 to 8 C. at all times. Promising experimental results are being obtained with a heated blood vaccine in England¹ and a desiccated vaccine in France². If either of these vaccines proves effective in the field, its use in Greece would be much more practicable than that of the Waldmann vaccine. Efforts are being made by the Greek government, in coöperation with UNRRA, to inaugurate the local production of foot-and-mouth disease vaccine.

Sheep Pox.—This disease is a constant source of trouble in the Thrace-Macedonia region. It assumes a very virulent form having an average mortality of 100 per cent, and abortions approaching 100 per cent in pregnant ewes. An effective vaccine, consisting of the virus slightly attenuated by means of gentian violet, is produced by the Veterinary Institute. Although a living agent of this sort is not desirable for the eradication of this disease, present conditions in Greece necessitate its use. Inoculation of sheep on the periphery of infected zones appears to have prevented successfully its spread. The greatest drawback of this vaccine is its heat lability. When transported without adequate refrigeration during hot weather, it quickly loses its potency. Airplane transport has been utilized by UNRRA to assure the de-

livery of potent vaccine to the veterinarians.

Glanders.—The extent of this disease in Greece is unknown. In 1940, Greek Army veterinarians discovered large numbers of equine animals used in the Albanian campaign to be infected. Advanced clinical cases have appeared sporadically within the last four months and it is highly probable, therefore, that the disease is prevalent. Area testing with mallein and the slaughter of positive reactors are planned at the earliest opportunity.

Tuberculosis.—Tuberculin testing has not been performed to any extent in the past five years. At the present time, between 40 and 50 per cent of the cattle in the area of Athens and Salonika are found to be tuberculous in the abattoirs. Rural districts do not suffer as heavily, and cattle coming from these areas show only 2 to 3 per cent involvement. Tuberculin testing in selected areas will be started shortly. The widespread infection that unquestionably exists will make it difficult to slaughter clinically unaffected animals. A modified control plan will be necessary until an improved national economy will permit more stringent measures.

Contagious Agalactia of Sheep and Goats.—At present, no therapeutic or preventive measures are being taken for the control of this troublesome disease. Chemotherapy with the reputedly effective arsenical preparation, stovarsol³, will be utilized in the near future.

Rabies.—Sporadic outbreaks of rabies occur in all parts of Greece. Indigenous production of rabies vaccine is totally inadequate to meet any emergencies. To meet this deficiency, UNRRA has imported Habel mouse-tested rabies vaccine, and the production of a more potent vaccine than was hitherto made has been started at the Veterinary Institute.

Hog Cholera (Swine Fever).—The practice of allowing pigs to roam at will results in continual flare-ups of this disease in all parts of the mainland. Outbreaks are frequently complicated by concurrent salmonellosis. Before the war, Greece relied upon imports of hog cholera biological products and, consequently, there is a lack of any production experience. UNRRA has imported hog cholera antiserum for prophylactic purposes, as crystal violet vaccine has not been obtainable. The importation of

virus is not feasible and, moreover, the use of live virus in inexperienced hands is not advisable. The veterinarians are advised to expose the serum-treated animals to the natural disease within a week if possible. At the same time, it is stressed that this is a stop-gap method of producing active immunity, and is hazardous where secondary salmonellosis is present. Crystal violet vaccine and Boynton's tissue vaccine, to be imported by UNRRA, will be used for combating hog cholera. Local production of the crystal violet vaccine is in the experimental stage.

Brucellosis.—Caprine and bovine brucellosis are known to be present in Greece, but it is difficult to estimate their prevalence. An agglutination test survey in dairy cattle has been started and more information will be available shortly. If conditions justify its use, inoculations with *Brucella* strain 19 will be undertaken.

Lamb Dysentery.—The same organism encountered in other countries, *Clostridium perfringens* type B (Wilsdon classification, *Bacillus agni*), exists in Greece. The disease occurs sporadically and often causes a high mortality in individual herds. Lamb dysentery antiserum is distributed to farmers who have suffered losses in the past. The farmers themselves inoculate the lambs.

"Struck" in Sheep.—The organism *Clostridium perfringens*, type C (*Bacillus pastus*), was identified as the cause of this disease in Greece. Greek veterinarians refer to the disease as "bradsot" or "enterotoxemia" which are distinct entities in the United States and Great Britain. An effective formalinized bacterin is produced by the Veterinary Institute.

Avian Diphtheria (Fowl Pox).—The diphtheritic form of the disease predominates in this country. The propagation of fowl pox is facilitated by the fact that poultry ordinarily are not confined. Sporadic attempts at control are made when small quantities of locally produced vaccine are available. The desiccated chicken-embryo vaccine is being imported by UNRRA.

Fowl Cholera.—Each winter, fowl cholera causes great losses in poultry. Because of the insistent demands of poultry owners, a bacterin (killed culture) is manufactured by the Veterinary Institute. As there was little evidence of its usefulness in the past, future production is being discouraged.

Spirochetosis.—This disease is prevalent

during the tick season and is effectively treated with atoxyl. No attempt at tick control is made.

Newcastle Disease (Pseudopest).—Apparently, this disease appeared in Greece for the first time in March, 1945. It was confused with fowl cholera until subsequent investigations indicated that the malady was Newcastle disease. UNRRA has been in communication with the Imperial Veterinary Research Institute in Mukteswar, India, in order to obtain a test sample of the vaccine manufactured by that Institute, which is reported to be highly effective. It is a chicken-embryo vaccine which, under present conditions, cannot be manufactured in Greece. This disease has caused enormous losses during the summer months. In distinction to the usual form seen in the United States where young poultry suffer most, both young and mature birds are involved in Greece. The mortality ranges between 70 and 100 per cent. The usual sanitary precautions are advised, plus the use of 1:5,000 dilution of potassium permanganate as drinking water.

Fowl Pest.—Some veterinarians have reported outbreaks of fowl pest in 1945, but it is believed to have been confused with Newcastle disease. The last serious outbreak of fowl pest in Greece occurred in 1929.

Dourine.—Central Greece and the area around Salonika were established centers of dourine infection before the war. For several years in the late 1930's, vigorous measures were taken to control this disease with some success. Artificial insemination, castration of males showing a positive reaction to the complement fixation test, and suppressive naganol chemotherapy during the breeding season were carried out. For the coming spring, efforts will be devoted to assuring the protection of valuable breeding stock in the state breeding centers.

Piroplasmosis.—Ticks are abundant during the hot weather, serving as vectors for the piroplasmosis in cattle, horses, sheep, goats, and dogs. Anaplasmosis and theileriosis are also present. Piroplasmosis of cattle (*Babesia bigemina*) and horses (*Nuttallia equi* and *Babesia caballi*) are the most troublesome, especially the former. Acaprin, and its substitute pirevan, have been used on clinically affected animals with good results. Mass dipping is difficult of accomplishment because of the

lack of facilities and personnel. It is planned to introduce the use of DDT, but limited supplies of this substance will restrict tick eradication measures to selected regions.

Distomiasis.—Approximately 30 per cent of the livers of both large and small ruminants in the abattoirs contain liver flukes. The carbon tetrachloride capsules imported at present by UNRRA are effective against the *Fasciola hepatica*, but the lancet fluke *Dicrocoelium lanceolatum* is resistant to the drug. In 1946, it is planned to introduce the use of hexachlorethane, and studies will be made to note the effect, if any, of this drug on the lancet fluke.

Echinococcosis.—Enormous losses in edible meat are caused by echinococcus cysts in the livers and lungs of sheep, goats, and cattle. Fifty per cent of the cattle and 80 per cent of the sheep and goats are affected. Human infections with echino-

coccus cysts are very common. A test campaign is being planned in selected regions where coöperation of the populace is assured. The feeding of offal to dogs will be discouraged, and a tapeworm anthelmintic will be administered periodically.

Strongylosis.—Throughout Greece, severe losses and unthriftiness are encountered in sheep and goats because of strongylosis. UNRRA has distributed phenothiazine and copper sulfate to combat the ravages of these parasites.

Hypodermiasis.—Infestation with cattle grubs takes its economic toll, but little attention is given to it in Greece. A concerted attack on this problem will have to await more favorable conditions than exist at present.

Acariasis.—Severe outbreaks of scabies occur regularly in sheep. The animals are treated individually with sulfur preparations instead of mass dipping, because of



Fig. 4.—At a Piræus quarantine station, Dr. Kaplan is shown administering anthrax antiserum to a mare imported from the United States after the animal had shown a severe reaction to anthrax spore vaccine.

the lack of proper facilities for the latter procedure.

Sterility in Dairy Cattle.—The inception of artificial insemination for cattle by the Near East Foundation, in cooperation with UNRRA and the Greek government, has focused attention on this problem. Trichomoniasis and granular vaginitis are very common because of infected communal bulls. Poor nutrition is another factor contributing to the breeding difficulties. Clinical evidences of avitaminosis A have appeared in heifers as early in the winter as October.

UNRRA IMPORTATION OF LIVESTOCK

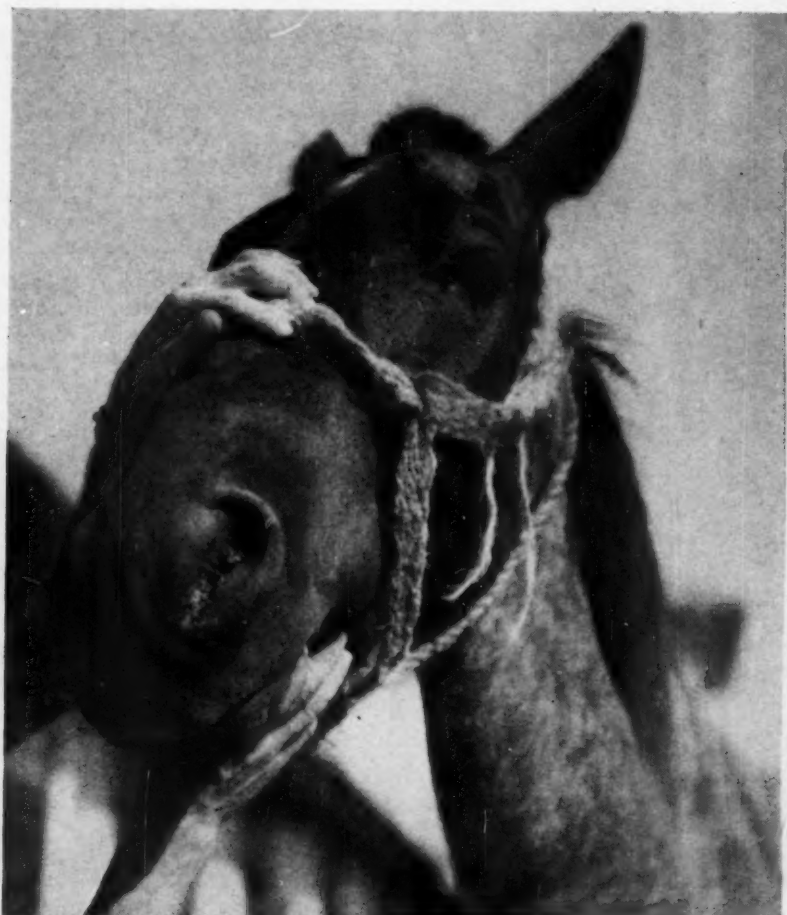
The replenishing of depleted stock was a matter of immediate concern to UNRRA and the Ministry of Agriculture. Appreciable numbers of livestock imported by UNRRA did not arrive until the end of July, however, because of procurement and ship-

ping difficulties. The following animals were imported during 1945:

| Species | Source | Number |
|-----------------------|---------------------|--------|
| Mules | British Army, Italy | 7,400 |
| Mules | Cyprus | 500 |
| Mules | United States | 150 |
| Donkeys | Cyprus | 2,400 |
| Mares | United States | 2,415 |
| Heifers (Brown Swiss) | United States | 553 |
| Bulls | United States | 28* |

*Six of these bulls were provided by the Church of the Brethren and imported by the Near East Foundation for use in their artificial insemination project conducted in cooperation with UNRRA and the Greek government.

Ordinarily, border and port quarantines of imported animals are very lax, thereby affording many opportunities for the introduction of diseases. The greatest menace at present, where exotic diseases are



*Fig. 5—Purpura hemorrhagica in an imported mare. Note the extensive swelling of the anterior one-third of the head.

concerned, is African horse sickness which has reached the Middle East. UNRRA has taken preliminary steps for this eventuality.

Careful preparation is made at reception ports for animals imported by UNRRA. All animals are held in quarantine for two weeks, and during this time, treatment of ill or injured animals is undertaken. In mares, the greatest dangers incident to shipping have been strangles with secondary pneumonia, purpura hemorrhagica, abortions, and digestive disorders. Shipments of heifers, mules, and donkeys have not given as much trouble from the veterinary standpoint. All livestock shipped from the United States are inoculated with prophylactic dose of hemorrhagic septicemia antiserum. In addition, the heifers are inoculated with *Brucella* strain 19, and the mares receive tetanus toxoid. While in quarantine in Greece, all animals are inoculated with anthrax spore vaccine. Heifers also receive blackleg bacterin, and mares are inoculated with a second dose of tetanus toxoid before they are distributed to the farmers.

D) FOOD SANITATION SERVICES

The responsibility for food sanitation rests with several groups, but the result of their combined efforts is pitifully ineffective.

In 1930, the School of Hygiene began the training of medical and sanitary inspectors in matters pertaining to food and water sanitation, sewage disposal, malaria control, and restaurant and barber-shop sanitation. The sanitary inspectors are employed by the Ministry of Health and assigned to prefectural health centers throughout the country. The inspection of food of animal origin, however, is done by the regional veterinarian, employed by the Ministry of Agriculture, who is a member of the prefectural health committee. At the present time, the sanitary inspectors are relatively idle because of inefficient administration and, as has been pointed out previously, the veterinarian has not time to perform properly his food inspection duties. Thus, food sanitation control in rural districts is negligible.

In the urban centers, food sanitation services are only slightly better. In addition to the state-employed sanitary inspectors, some of the larger cities employ sani-

tary officers of their own. The municipal employees are few in number and ineffectual in operation. Food inspection in most cities except Athens and Piraeus is performed by physicians who haphazardly carry out this unwelcome function in addition to their other duties.

In 1943, the Ministry of Interior organized a veterinary inspection service incorporated into city police activities. At the present time, there are eight veterinary inspectors in Athens and three in Piraeus. The lack of personnel has prevented the extension of this organization to other urban communities.

The badly organized and inadequate food sanitation services appreciably add to public health hazards. It will be recalled that abattoir statistics of Athens and Salonika, for example, show approximately 50 per cent of the dairy cattle in the immediate vicinity of these two cities to be infected with tuberculosis, while tuberculosis infection of cattle from the rural areas is approximately 3 per cent. *Cysticercus cellulosae* is found in 3 per cent of the swine. Carcasses affected with anthrax are commonly found in the public markets. Thirty per cent of the livers of cattle, sheep, and goats are affected with distomiasis. Echinococcus cysts are found in 80 per cent of the livers and lungs of sheep and goats, with 50 per cent of the cattle being similarly affected. Careless handling of carcasses amid filthy surroundings and absence of refrigerating facilities add to this unsavory picture.

Milk sanitation is, if possible, in a worse state. No supervision worth mentioning is practiced at any time in the production, collection, processing, and distribution of milk and its products. There is one large pasteurizing plant in Athens and a small one in Salonika. Pasteurizing efficiency is very poor, and highly inadequate sanitary and bacteriologic controls are used. As a result, the small amount of milk that is "pasteurized" sours within eight hours in hot weather.

UNRRA, in cooperation with the Greek government, is attempting to reorganize, improve, and expand the food sanitation services. An attempt is being made for greater unification of the existing services, and to inaugurate the training of more lay inspectors.

SUMMARY

The depredations of war and occupation have heaped massive burdens upon an already weak veterinary structure in Greece. Animal, as well as human, diseases have no regard for national boundaries, and the present control of epizootic diseases in Greece is closely linked with agricultural rehabilitation in other European countries which are struggling to regain their equilibrium.

UNRRA has contributed wholeheartedly in an attempt to help Greece overcome livestock and veterinary problems of immediate urgency. Rehabilitation activities of more permanent value have also been pursued. UNRRA's aid will continue and increase in 1946 in an effort to repay, in further measure, civilization's debt to the Greek people for their staunch loyalty to the United Nations during the recent war.

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¹Galloway, I. A., Research Institute, Pirbright, Surrey. Personal Communication.

²Lépine, P., Pasteur Institute, Paris. Personal Communication.

³Hagan, W. A.: The Infectious Diseases of Domestic Animals. Comstock Publishing Co., Ithaca, N. Y. 1943; in which is cited an article by Bridré, Donatien, and Hilbert, from *Compt. rend. Acad. Sci.*, 187, (1928): 262.

⁴Peatt, E. S. W.: The Army Veterinary Services in India and Burma. *Vet. Rec.*, 57, (1945): 219-220.

Complicating the Identity of Drugs

A glance through pharmacies maintained by veterinary hospitals discloses that the multiplicity of trade names for the same general type of product continues to mount; witness also the entries in current catalogues. While the many names for the same pattern grew out of the long neglect of the general drug trade to take veterinary medicine along as it went more and more into the field of specialization, the founding of exclusive veterinary supply firms was inevitable, as was also the naming of the products to identify the producer rather than the product itself. The rulings of the Food and Drug Administration removed the false and exaggerated claims contained in trade names but only made some of them less comprehensible. There is no reform in sight and none is sought in respect to the primitive group, but why continue the confusion by multiplying the names of the new drugs coming into the picture; sulfonamides, antibiotic agents,

vitamins, et al. The U. S. Bureau of Animal Industry and the U. S. Public Health Service have directed the use of uniform nomenclature for the serums, bacterins, and vaccines without harming the commercial laboratories engaged in their production. So why should not a similar reform obtain in the drug field? A more brilliant, more outwardly scientific, and no less profitable future lies at the end of that reform. The veterinary profession is too deeply indebted to the source of supply that consorts only with the graduates of veterinary colleges to take anything but the most friendly attitude toward the situation, but it must agree with the *Journal of the American Medical Association* (Oct. 20, 1945) in registering a protest against the marketing of such products as the antibiotic agents (preparations) under confusing names.

Physician Population Increased

Despite the war and fear of shortage, the physician population increased 1,892 in 1945 (*J. A. M. A.*, May 11, 1946). The total number of new licenses issued was 9,153. The net gain was 5,707, less 3,813 deaths. The top figure (9,153) includes physicians who held licenses elsewhere, and 3,612 licensed by reciprocity or indorsement of other states, including the National Board of Veterinary Examiners. The all-time high was reached in 1943 when 9,821 were registered. In the last forty years, the lowest number was 4,231 in 1918, which was a drop from 6,082 in 1905.

National Board of Medical Examiners

The certificate of the National Board of Medical Examiners is accepted by the licensing board of all but four states (Florida, Indiana, Montana, Wisconsin), all of the U.S. territories and possessions, and admits holders to licensure examinations in England, Scotland, Spain, Turkey, and other countries.

The growing popularity of the NBME is indicated by the constantly increasing number of applicants for its examinations since it was established in 1922: 388 in 1922 to 3,865 in 1945. Taking Part I of this examination is a requirement of some of the medical schools.

Historical Sketches and Memoirs

II. The AVMA Is 92 Years Old, Not 83

L. A. MERILLAT

Chicago, Illinois

I.

The American Veterinary Medical Association, under three different names, has held regular annual meetings since 1854 and is, therefore, ninety-two years old as of 1946. It was founded May 7, 1854, at Philadelphia, by Robert Jennings of New Jersey and Isaiah Michener of Pennsylvania, under the name of "American Veterinary Association." Its first officers were:

W. W. FRALEY, Philadelphia, *President*.

JAMES BRYAN, A.M., M.D., Philadelphia, *1st Vice-President*.

JOHN SCOTT, Philadelphia, *2nd Vice-President*.

ROBERT JENNINGS, Cleveland, Ohio, *Secretary*.¹

R. EVANS, Philadelphia, *Corresponding Secretary*.

A. TEGTMEIER, *Treasurer*.

E. COOTS, Westchester, Pa., *Librarian*.

MARCELLEUS MUNDAY, Esq., Philadelphia, *Councilor*.

The American Veterinary Association was recognized by the Pennsylvania Agricultural Society, early sponsor of formal agricultural education in this country. At its exhibition in Philadelphia on Sept. 29, 1854, the new AVA was awarded a silver medal for its excellent collection of anatomical and pathologic specimens, an event displaying a spirit uppermost in mind of both veterinary medicine and livestock farming which, unfortunately, was permitted to turn to hostility and misunderstanding, never to fade out unto this day. Commenting on an article on veterinary progress by Robert Jennings (*Am. Vet. J.* 1, (May 1856): 242), C. M. Wood, West Salem, Mass., who ten years later was elected president of the AVMA, wrote: "In Philadelphia there has been formed an American Veterinary Association which is already distinguished."

When the development of veterinary medicine went into the hands of the "town boys" (at the New York meeting of 1863), who seemed to care little about the purposes of veterinary medicine beyond the treatment of town horses, veterinary-agricultural coöperation stopped cold. There, sirs, you have the very starting point of a quarrel that should never have begun. As it looks in print, agriculture was driven to the course it took through our own neglectful tactics during the five succeeding decades and beyond. The present AVMA² has had three names:

- 1) American Veterinary Association from 1854 to 1863;
- 2) United States Veterinary Medical Association from 1863 to 1898;
- 3) American Veterinary Medical Association from 1898 to now.

The meeting held at the Astor House, New York City, June 9, 1863, known erroneously as the birthday of the AVMA, was the ninth annual meeting in fact, and this is the third attempt to set the records right in this respect, namely:

1) Dr. Robert Jennings, the Association's second secretary and the recording secretary of the Astor House meeting, published a comprehensive brief of the historic meeting in the January, 1884, issue of the *Journal of Comparative Medicine and Surgery*,³ which put on record the only facts obtainable about the so-called "founding convention." The records of that meeting, those of the eight previous meetings of the AVA in Philadelphia, and practically all useful information about the subsequent meetings up to Huidekoper's election to the presidency in 1887, are strangely not to be found.

²In these sketches AVMA is synonymous with AVA and USVMA.

³Jennings, R. V.S.: The Early History of Veterinary Medicine in the United States, *J. Comp. Med. and Surg.*, 8, (Jan. 1884): 23-32.

This journal, renamed *Journal of Comparative Medicine and Veterinary Archives*, was published until 1903 with unimportant interruptions.

This article is the second in a series of "Historical Sketches and Memoirs" by Dr. Merillat which will appear in the *JOURNAL* during coming months. The first article appeared in the June issue.

¹Dr. Jennings lived at Bordentown, N. J., but was engaged in teaching at the Ohio Agricultural College in Cleveland at the time of this meeting.

2) Dr. Rush Shippen Huidekoper, the fifteenth president (following 1863) gives us the second fragmentary report in the transcript of his presidential address made at the Boston meeting of Sept. 17, 1889. He adds information not contained in Jennings' report published in 1884 (*loc. cit.*). Huidekoper's address was a compilation of mouth-to-ear interviews.

3) Now comes the Association's eighteenth secretary (this writer) joining with Jennings and Huidekoper in suggesting that the records be put in order, or, as was the fate of the preceding two, to be buried in current literature for the convenience of future fact-hunters. That longtime prejudice between New York and Philadelphia, which is still fresh in mind, is inseparable from American veterinary history.

2.

The founding of the AVMA is a black-out. One hesitates to answer that one. The whole truth, however approached, cannot

Why the Blackout?

be told without risking offense to both dead and living—a frankly unpleasant task. Truth can be unpleasant to write. In this sketch, from one point of view, the raw truth involves the professional life of Alexandre Liautard during his forty years of influence on the American veterinary educational system which, in some respects, was not "without blemish," and, from the other view, is a group of outstanding figures who belong to the honor roll of American veterinary medicine. As a matter of fact, in this gleaning for purposeful facts in literature and memory, there was the choice between telling the truth and (pardon the vernacular) keeping my trap shut. As stated above, the former was chosen but without thought of scribbling purposeless fault-finding or scratching old sores for the fun of the thing. The good of the cause on the long pull is all that matters.

Assuming, as a point of departure, that the founding of the AVMA at New York City in 1863 is, practically speaking, symbolic with the starting of veterinary education and organization in America, and that it took place while General Lee was marching on Washington and Philadelphia via Gettysburg, the date itself should be exciting enough to be kept fresh in mind by veterinarians on both sides of the Mason and Dixon line, even though no connection

is seen between the meeting and the problems of a senseless war among the states.

The National Academy of Science was created by Act of Congress one month before the first meeting of the AVMA obviously also as a wartime project.

There should be some value in knowing when, why, where, and how one's way of making a living was launched. In digging around for facts appertaining thereto, some hot, blistering irritants were exhumed. For example, why is the real founder of the AVMA, Robert Jennings, practically a forgotten man and his state of residence carried in error on the records for eighty-three years? The answer is astonishing. And why is the AVA, founded in 1854, whose name was changed to USVMA in '63, a practically unknown association? As plain as a billboard, the convention of June 9, 1863, was convened on a countrywide written invitation of the AVA to assemble at the Astor House on that day, and the convention opened with the reading of the minutes of two previous meetings (annual and semiannual as per custom) by Secretary Robert Jennings. The minutes were heard and approved by vote of the delegates present. And pray tell, why are we listing "R. Jennings, New York," year after year as secretary in 1864 inasmuch as he never lived nor worked in New York? Jennings' home was Bordentown, N. J., across the river from Philadelphia. His address was given as Cleveland, Ohio, for a spell in the 1850's, while lecturing in the state agricultural college there. In the early 1880's, he moved to Detroit where he died in 1893, five years after I entered the veterinary profession in Chicago.

Here is another question which the published records press heavily upon the mind; why is the fourteenth annual meeting (counting 1863 as the first) held at the Continental Hotel in Philadelphia, Sept. 20-21, 1876, in connection with the Centennial Exposition, carried as having been held at Dr. Liautard's office in New York City on September 10? Dr. Liautard was the president in 1876 and delivered his presidential address at the Philadelphia meeting.

The numbering of annual meetings has been a mess. Up to Huidekoper's presidency (1887), Liautard considered the 1864 meeting the *First*. That is, the New York meeting of 1863 at the Astor House was jockeyed so as to become the burial ceremony of the

AVA, not the *First* of the USVMA. So, Liautard in the *American Veterinary Review* (which he controlled) published his presidential address delivered at Philadelphia, Sept. 20, 1876, as the *Thirteenth* not the *Fourteenth* annual. (The numbering has been corrected. The meeting of 1863 or "founding convention" is the *First* meeting on the present records.) Not a few of the meetings held in Boston or New York City were actually dinner sessions such as are common among the local associations of today. Sometimes there was no quorum.

The Philadelphia meeting of 1876, held at the time of the Centennial exposition, was important in respect to the large attendance and the resolution passed to publish an official journal of the Association to be called the *American Veterinary Review* and to be placed in the hands of A. Liautard and A. Lockhart for editing and managing. That was the birthplace of the JOURNAL of the American Veterinary Medical Association, now in its 108th volume. But, in the *Review*, in replying to charges of unfairness made by Robert Jennings, Jr., in *The Veterinarian* (London), the Philadelphia meeting is called the "Anniversary Meeting," not the annual meeting. The truth is that President Liautard held a "preconvention" meeting at his office in New York City, had himself reelected president and then ten days later went to Philadelphia to deliver his presidential address and preside over the "Anniversary Meeting." That bit of history lived long after I came upon the scene. In view of the already ten-year-old scrap between New York and Philadelphia, it would have been risky business for Liautard to trust his reelection to a big crowd of Pennsylvanians. "There is history in all men's lives," said the bard of Avon, and there is always the risk of history repeating itself with terrific results to a professional association.

To show that the "Anniversary Meeting" of President Liautard, Sept. 20-21, 1876, was not an ordinary one, here is the program:

Prof. A. Liautard—The History of Veterinary Medicine in the United States.

Prof. James Law—Zymotic Diseases, and the Duties of the Veterinary Surgeon.

Dr. A. A. Holcombe—Effects of Stimulants in Disease.

Prof. Duncan McEachran—Sanitary Mea-

sures in Preventing Diseases in the United States and Canada.

Dr. Thomas S. Very—Chronic Lameness in Horses.

Dr. E. F. Thayer—Fistula.

The discussion of these papers took place at the session of September 21. This was the first two-day meeting the Association had held. In view of the character of the reporters and their papers, why were they suppressed? There are men who resent sharp tactics. So in 1877, C. P. Lyman came to town and beat Liautard for reelection, and in 1887, or ten years later, Huidekoper right in New York did the same thing and added to the mental injury by taking the semiannual meeting to Philadelphia, the first one for twenty-four years, and then to Baltimore which had never been so honored.

With Liautard losing his toehold, note the scattered meetings of the next ten years: Brooklyn, Washington, Chicago (twice), Philadelphia, Des Moines, Buffalo, Nashville, Omaha, Atlantic City, Detroit, Minneapolis, Ottawa, St. Louis, Cleveland, New Haven, Kansas City. A national association had been born! Out west some of us began to suspect, after these glorious peregrinations, that there had been an arthropod in the petrolatum all the time and that his name was Liautard, the longtime champion of low educational standards, who was shaping minds away from the bases of progress. (Before passing judgment on this view, readers are requested to wait for the sketch on the biography of Liautard. There are some fine things to say about this New York practitioner-educator, and they shall not be omitted or slighted).

The history of the JOURNAL's ownership must be told at this point to "keep the eye on the ball and follow through:"

1877 through 1881—Property of the USVMA.

1882 to 1893—Property of Alexandre Liautard, New York.

1893 to 1895—Property of Sabiston & Murray, New York (publishers of books).

1896 to 1908—Property of Dr. Roscoe R. Bell.

1908 to 1915—Property of Dr. Robert Ellis.

1915 to now (1946)—Property of American Veterinary Association, a nonprofit Illinois corporation.

The editors (in chief) were A. Liautard, 1877 to 1895; Roscoe R. Bell, 1895-1908; Robert Ellis, 1908-1915; W. H. Dalrymple, 1915-1916; P. A. Fish, 1916-1919; John R.

Mohler, 1919-1922; H. Preston Hoskins, 1922-1939; L. A. Merilatt, 1939 to now (1946).

This brief documentation of *Review* history is essential to an understanding of the publication that has shaped the course of the veterinary profession in this country. Except for the *American Journal of Comparative Medicine and Surgery*, renamed *American Journal of Comparative Medicine and Veterinary Archives*, 1881-1903, which had a too unstable editorial policy, there was no journal to govern the course of veterinary medicine until the coming of *Veterinary Medicine* and the *North American Veterinarian* in the second and third decades of this century. (A sketch on English veterinary journals is in the offing). The *Review* lived along the ragged edge of financial desolation but it did survive and, to its everlasting credit, it had intellectual if not editorial competence. It was charged, not without ample reasons, of covering the needs of the American Veterinary College and the nakedness of low educational standards, until Roscoe R. Bell, a Brooklyn practitioner, set it on its feet as a practitioner's "house organ," where it thereafter remained.

(To be continued)

The Veterinarian and His Community

The big news now is about the men and women coming home, reconversion of industry to peacetime production with jobs for all, and agriculture's continued abundance of food in order that the greatest possible number of people may have (a healthy) life, liberty, and the pursuit of happiness.

Our nation's business (in dollars) is reported to have recently declined 21 per cent in one month and we have a good chance to see it decline some more. Veterinarians may suggest methods of improving the economic health of their respective communities. We have read statistical tables on estimated losses of farm animals, and their total values add up to astronomical figures.

Let us select some good farming area 30 miles square containing about 2,500 farms heavily populated with farm animals. There is an estimated livestock loss in excess of \$500.00 per farm per year, which totals over \$1,250,000. There are many such localities having no veterinarians; many of these losses, wherever they are and however much

they are, could be saved by the skills and efforts of veterinarians. In these areas are opportunities awaiting the challenges of the profession.

Money in agricultural communities is reported to turn over three times in trade circles (as compared to seven to eight times in commercial industrial areas). That \$1,250,000 loss—if the people had it—would buy more of those things they need for abundant living, including shares in America—U. S. Bonds—resulting in \$3,750,000 more of business in that community.

Contrast this to the prosperous communities whose livestock losses have been held down to a minimum by the coöperative interests and efforts of the veterinarians and the successful farmers.

Public health is in for a boost, too. There is a great relationship between animal health and human health: healthy animals, healthy people, healthy pocketbooks, and good community spirit.

Were business and professional men to fully realize the value of veterinarians to the economics and public health of their communities, they would offer strong support to our "animalitarian" and humanitarian efforts.

We would then be called upon to extend our efforts into those areas where there are no veterinarians at present, and to enlarge the scope of public health activities.
—R. O. Rydell, D. V. M., Wheaton, Minn.

Section Association Work

A resolution to divide the sessions of the AVMA annual meetings into sections (*Am. Vet. Rev.* (Nov., 1897):325-326) in order to enlarge the scope of its work and eschew the disadvantage of overcrowded programs was defeated at the Nashville meeting in 1897. It required twelve years to put that reform in motion. The first meeting to be held in divided sections was at San Francisco, in 1910. Before that, especially after the turn of the century (more than before), open business sessions often took up so much time that excellent papers were crowded off the literary program, naturally, to the chagrin of authors who had traveled half way across the continent to read them. The membership, accustomed to haggling over business matters, were slow to surrender that privilege to the Executive Board.

SURGERY & OBSTETRICS

AND PROBLEMS OF BREEDING

The Blood Picture in Cases of Retained Fetal Membranes in Cattle

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ALTHOUGH the subject of retained placenta is one of great economic importance, the basic causes of retention are not well understood, and a review of the voluminous literature finds very little agreement on the therapeutic measures that should be employed in treating this condition.

This study was undertaken with the idea in mind that a knowledge of the effect of retained fetal membranes on the various elements of the circulating blood would contribute to a better understanding of the condition, and thus lead to a more intelligent management of these cases in the field.

REVIEW OF THE LITERATURE

The general literature on retained placenta is too well known and extensive to be completely reviewed here. Most of it is an expression of the views of the authors with very few reports of critical studies.

Williams, Udall, Frost, and their coworkers¹ made exhaustive laboratory examinations on a group of 75 cases of retained placenta, and Udall, Cushing, and Fincher² studied 56 cases. They presented convincing evidence that lesions of the endometrium and the placental surface of the chorion constitute the basis for retained membranes. Many of these lesions, they found, originated at the time the fetal membranes began to form early in embryonic life, and all were present long before the advent of parturition. It was their opinion that the basic causes of retained placenta are intimately associated with errors in animal husbandry, uterine infection, and genital ill health. They did not find brucellosis to be a factor. In one group of 75 animals with retained placentas, 55 were negative to the laboratory tests

for *Brucella abortus*. They stated that the view that retained placenta without abortion is evidence of infection with *Br. abortus* is not supported by the facts.

Ferguson, Irwin, and Beach³ studied the blood picture of 24 cows during a 34-day period preceding, and a 34-day period following, parturition. Twenty of the cows were studied through two normal parturitions, 3 through one normal parturition, and 19 of the same individuals through a *Br. abortus* infected pregnancy. They did not state whether any of the animals suffered from retained placenta.

They concluded that infection with *Br. abortus* does not greatly influence the blood count during the parturient period, since the general trends apparent in both normal and infected cattle were similar. They observed that the number of erythrocytes per cubic millimeter increased slightly immediately following calving, and then decreased somewhat below the pre-calving level in the last twenty-four days of the post-calving period. The total number of leucocytes decreased significantly immediately following parturition, and later increased to about the pre-calving level.

They found no significant changes in the percentage of either the neutrophils or the lymphocytes in the period studied, but did find an increase in the percentage of monocytes and a decrease in the percentage of eosinophils during the ten-day post-calving period.

Smith and Kilbourne⁴, in their investigations on the nature and etiology of Texas fever of cattle, were the first to study the bovine blood picture. They gave the number and size of the red cells and counted the leucocytes, but because of the small number counted did not consider their work accurate.

Dimock and Thompson⁵ studied the blood of normal cows and gave the values for the total cell count as shown in chart 1. They reported the values for the various leucocytes as shown in chart 2.

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Burnett¹, summarizing the work to date, gave values agreeing essentially with those of Dimock and Thompson, and pointed out that there

CHART 1

| | Average number | Minimum number | Maximum number |
|-------------------------------|-------------------|-------------------|-------------------|
| Erythrocytes per cmm. | 6,152,689 | 4,818,000 | 7,920,000 |
| Leucocytes | 5,486 | 2,349 | 10,610 |

was some apparent fluctuation in values for various parts of the country.

Haden⁴, in his excellent treatise on hematology, discussed the clinical interpretation of the blood picture and brought out numerous points pertinent to this discussion. During the short period that a granulocyte remains in the blood stream, it usually shows no alteration except the changes of degeneration which a few undergo before dying in the circulation. In general, the nucleus, the granules, and the cytoplasm remain substantially as they were on emerging from the bone marrow.

The bone marrow, he stated, is affected not only by chemical stimuli from bacterial prod-

CHART 2

| | Average % | Minimum % | Maximum % |
|----------------------|--------------|--------------|--------------|
| Large mononuclears.. | 1.4 | 0.2 | 3.3 |
| Polynuclear | 30.5 | 13.0 | 45.8 |
| Eosinophils | 13.15 | 3.8 | 26.5 |
| Lymphocytes | 54.2 | 31.0 | 76.0 |
| Mast Cells | 0.59 | 0.1 | 1.2 |

ucts in calling out new cells, but these same toxic substances which stimulate new cell formation may also injure the embryonic cells which give rise to new granulocytes. The value of a differential white cell count lies in determining, from the number and type of cells present, how great is the stimulus for the formation of new cells and thereby determining the severity of a toxic process. At the same time, it is necessary to evaluate the capacity of the marrow to respond, which will depend on the state of the marrow and any toxic effect on it.

The granulocyte count in the blood always reflects a balance between the need of the tissues and the capacity of the marrow to respond. It may reflect the state of the marrow, provided the cells are freely released, or the need of the tissues, if the marrow can freely respond. The bone marrow varies in state of activity, capacity to respond, and degree of maturation and quality of cells provided by it. The tissues vary in requirements to combat injury, and in the speed with which they take cells out of the blood stream. The blood count shows only a section of a passing parade, the members of which originate in the marrow and constantly leave through the tissues

or gastrointestinal tract, or die by the wayside. The places of the members lost are taken by new ones from the marrow. The number and quality in the parade show the condition of the source of supply, and the need for reinforcements at the point for which they are headed.

If the marrow is affected by toxemia, the cells appearing in the circulation show evidence of such damage. The toxemia may so affect the developing cells in the marrow that normal differentiation does not go on. Thus there may be no nodulation or separation of the nucleus into nodes. Another important evidence of a toxic effect on the developing granulocyte is the appearance of "toxic," or basophilic, granules in the cytoplasm. Still other evidences of toxic damage are the appearance of swollen cells, abnormal staining reactions, and smudges.

A deficiency in the number of granulocytes in the circulating blood, if not due to aphasia of the marrow or mechanical blocking of the cells in the marrow, is due to depression of myeloid activity by toxins. Granulopenia of this latter type is characterized by the appearance in the circulating blood of granulocytes with immature nuclei and toxic granulation.

MATERIALS AND METHODS

One hundred cases of bovine retained placenta, taken as they were presented for treatment, were used in this study. There was no selection of any kind other than that the animal had retained her fetal membranes for at least twenty-four hours following parturition and had not expelled them at the time the blood sample was drawn. Each case was classified according to the duration of retention into twenty-four hours, forty-eight hours, seventy-two hours, etc., up to 192 hours of retention, the longest encountered in this series. Animals were placed in that time grouping which most nearly corresponded to the actual time from parturition to the taking of the blood sample.

In order to determine the normal bovine blood picture for the area of this experiment, blood samples from 15 healthy, nonparturient cows were submitted to the same studies, using the same methods and apparatus as the samples from the retained placenta cases. Each animal in this group was given a careful clinical examination before the sample was drawn. As nearly as could be determined, all were in perfect health. All were free from mastitis and negative to the agglutination test for brucellosis (table 1).

All blood samples were taken from the jugular vein, using California-type bleeding needles and BAI-type blood tubes, the inside of which had been previously moistened with a saturated aqueous solution of ammonium oxalate.

Hemoglobin determinations were made by diluting 0.5 cc. of blood 1:20 in a white cell pipette with N/10 hydrochloric acid; the reading was made thirty minutes afterward in a Haden-Hausser hemoglobinometer.

As soon as each sample was taken, blood films were made on microscope slides and were stained with Wright's stain. Differential leucocyte counts were made on all samples.

Total red cell counts were made at 1:200 dilution with Hayem's solution, using the improved Neubauer hemacytometer. Total white cell counts were made at 1:20 dilution in 2 per cent acetic acid solution, using the same hemacytometer as for the red cell counts. In making the differential leucocyte counts, a record was kept of the percentage of neutrophils showing toxic, or basophilic granulation, and the smudges were classified as none, few, many, or abundant.

RESULTS

In the group of normal cows, the average red cell count was 5,433,000 per cubic millimeter, the lowest was 4,550,000 per cubic millimeter, and the highest was 6,700,000 per cubic millimeter. The average total white cell count for this group was 6,380 per cubic millimeter, the lowest 4,200 per cubic millimeter, and the highest 7,800 per cubic millimeter.

The average differential leucocyte count for this group as shown in table 1 was 4.33 per cent eosinophils, 0.6 per cent basophils,

0.0 per cent myelocytes, 0.2 per cent juveniles, 0.33 per cent stabs, 32.7 per cent segmented neutrophils, 58.3 per cent lymphocytes, and 2.9 per cent monocytes. No toxic granulation was observed and smudges varied from none to few.

Twelve cases were encountered in this study in which the time from parturition to the taking of the blood sample placed them in the 24-hour grouping. The average total cell count for this group was 6,478,000 erythrocytes per cubic millimeter and 5,943 leucocytes. The average hemoglobin level was 9.3 Gm. per 100 cc. of blood.

The average differential leucocyte count revealed the leucocytes to be composed of 5.1 per cent eosinophils, 0.75 per cent basophils, 0.15 per cent myelocytes, 0.58 per cent juveniles, 1.83 per cent lymphocytes, and 4.42 per cent monocytes. Of the neutrophilic leucocytes, 4.83 per cent contained toxic granules. Eight of the 12 films showed a few smudges.

There were 14 cows in the 48-hour retention group. The average total red cell count was 5,721,000 per cubic millimeter, the total white cell count was 6,280 per cubic millimeter, and the hemoglobin 8.9 Gm. per 100 cc. In the differential leucocyte count for this group, there was an average

TABLE 1—Blood Picture of Normal Cows

| Case No. | Total cell count | | Differential leucocyte count | | | | | | | | | | Smudges |
|----------|------------------|--------|------------------------------|----------|----------|-----------|----------|----------|----------|-----------|------------|-----------|---------|
| | R.B.C. | W.B.C. | Hb. (Gm./100 cmm.) | Eos. (%) | Bas. (%) | Myel. (%) | Juv. (%) | stab (%) | seg. (%) | T. G. (%) | Lymph. (%) | Mono. (%) | |
| 1 | 5,350 | 6,400 | 8.5 | 4 | 0 | 0 | 0 | 1 | 30 | 0 | 62 | 3 | None |
| 2 | 5,950 | 5,400 | 9.0 | 5 | 0 | 0 | 0 | 0 | 41 | 0 | 53 | 1 | None |
| 3 | 5,500 | 9,200 | 9.0 | 4 | 0 | 0 | 0 | 0 | 34 | 0 | 62 | 0 | Few |
| 4 | 5,475 | 9,300 | 10.0 | 5 | 2 | 0 | 0 | 1 | 33 | 0 | 55 | 4 | Few |
| 5 | 5,700 | 9,200 | 9.5 | 2 | 0 | 0 | 0 | 1 | 34 | 0 | 59 | 4 | None |
| 6 | 4,750 | 7,800 | 9.0 | 5 | 1 | 0 | 1 | 0 | 30 | 0 | 59 | 4 | None |
| 7 | 5,500 | 6,000 | 7.75 | 4 | 1 | 0 | 0 | 0 | 24 | 0 | 66 | 5 | Few |
| 8 | 6,700 | 5,800 | 9.0 | 6 | 0 | 0 | 0 | 0 | 28 | 0 | 65 | 1 | None |
| 9 | 6,100 | 6,400 | 9.5 | 3 | 0 | 0 | 1 | 0 | 31 | 0 | 62 | 4 | Few |
| 10 | 4,950 | 5,800 | 8.75 | 4 | 0 | 0 | 0 | 1 | 37 | 0 | 53 | 5 | None |
| 11 | 4,550 | 4,200 | 8.0 | 5 | 1 | 0 | 0 | 0 | 34 | 0 | 59 | 1 | None |
| 12 | 5,200 | 5,000 | 8.0 | 4 | 1 | 0 | 0 | 0 | 35 | 0 | 58 | 2 | None |
| 13 | 5,050 | 5,400 | 7.5 | 3 | 1 | 0 | 0 | 1 | 29 | 0 | 62 | 4 | Few |
| 14 | 5,300 | 4,800 | 8.5 | 6 | 0 | 0 | 1 | 0 | 34 | 0 | 56 | 3 | None |
| 15 | 5,475 | 5,000 | 9.0 | 4 | 2 | 0 | 0 | 0 | 36 | 0 | 44 | 2 | Few |
| Aver. | 5,433 | 6,380 | 8.73 | 4.33 | 0.6 | 0 | 0.2 | 0.33 | 32.7 | 0 | 58.3 | 2.9 | Few |

Key: R.B.C. = Red cell count in 1000's.
 W.B.C. = White cell count.
 Hb. = Hemoglobin in Gms. per 100 cc.
 Eos. = Eosinophils.
 Bas. = Basophils.
 Myel. = Myelocytes.

Juv. = Juveniles.
 Seg. = Segmenters.
 % T.G. = % Toxic granulation.
 Lymph. = Lymphocytes.
 Mono. = Monocytes.

of 3.9 per cent eosinophils, 0.85 per cent basophils, 0.43 per cent myelocytes, 1.7 per cent juveniles, 7.1 per cent stabs, 9.2 per cent segmenters, 69.2 per cent lymphocytes, and 7.5 per cent monocytes. Toxic granulation was observed in 47.3 per cent of the neutrophils.

Twenty-two cows were in the 72-hour group. The average red cell count was 5,759,000 per cubic millimeter, the average white cell count was 5,950 per cubic millimeter, and the average hemoglobin value was 8.8 Gm. per 100 cmm. of blood. Of the leucocytes, there were 6.3 per cent eosinophils, 0.54 per cent basophils, 1.6 per cent myelocytes, 3.9 per cent juveniles,

7.3 per cent stabs, 2.9 per cent segmenters, 71.0 per cent lymphocytes, and 7.1 per cent monocytes. Of the various neutrophilic elements, 76.0 per cent showed toxic granulation and smudges were classed from many to abundant in all samples.

In the 96-hour classification, there were 16 cases with an average cell count of 5,889,000 per cubic millimeter. The average white cell count for this group was 7,250 per cubic millimeter and the average hemoglobin was 9.44 Gm. per 100 cmm. of blood. The average percentage of various types of leucocytes was 5.4 eosinophils, 0.69 basophils, 3.6 myelocytes, 9.3 juveniles, 16.6 stabs, 3.25 segmenters, 57.4 lympho-

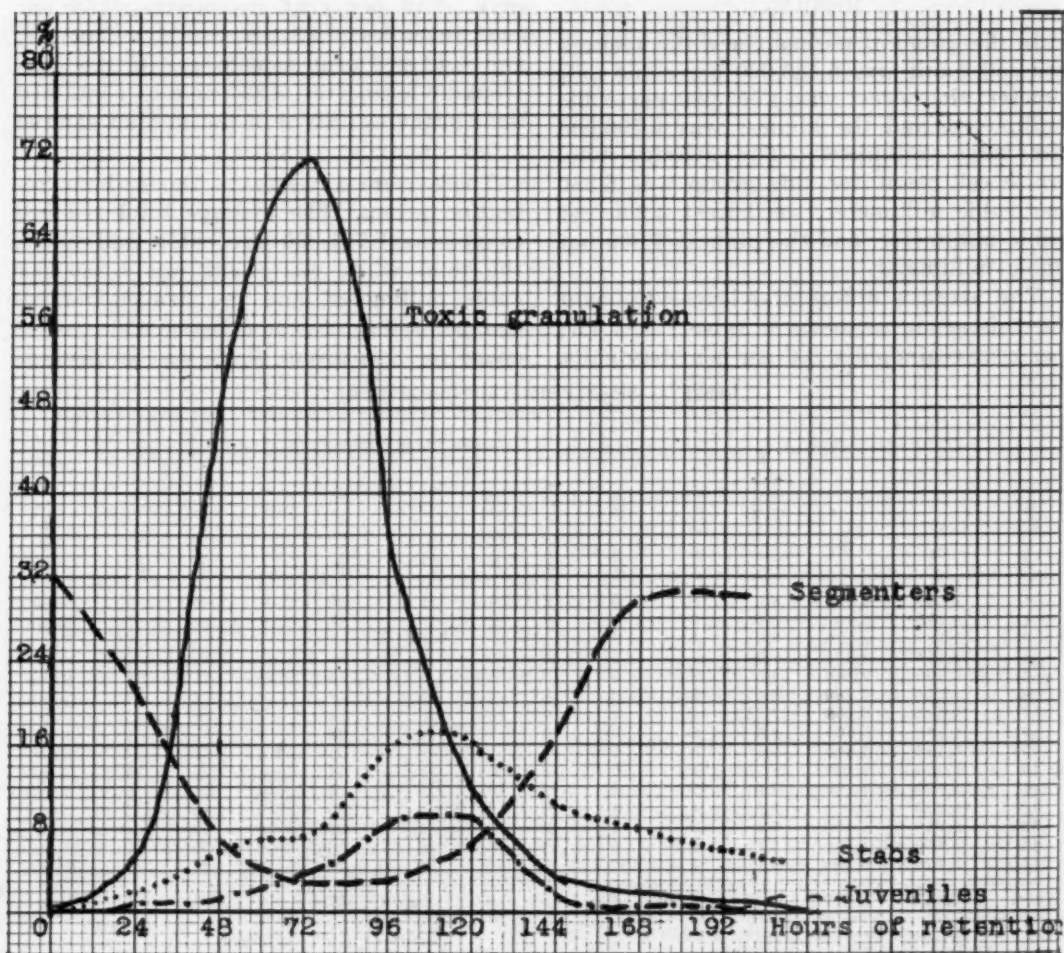


Fig. 1—Percentages of segmenters, stabs, juveniles, and toxic granulation at various stages of bovine placental retention, showing a typical Schilling Index degenerative shift to the left. Between the seventy-second and ninety-sixth hour, the shift is toward recovery.

cytes, and 3.3 monocytes. Toxic granulation appeared in 33.3 per cent of the neutrophils. In six samples, smudges were classed as few, and in the remaining ten, they were classed as many.

Twelve cows had suffered retention 120 hours when the samples were taken. In this group, the averages were 6,002,000 red cells and 6,179 white cells per cubic millimeter, respectively, and 9.06 Gm. of hemoglobin per 100 cc. of blood. Differential leucocyte averages were 3.83 per cent eosinophils, 0.93 per cent basophils, 3.17 per cent myelocytes, 9.83 per cent juveniles, 15.9 per cent stabs, 6.1 per cent segmenters, 58.0 per cent lymphocytes, and 3.5 per cent monocytes. Of the neutrophils, 10.7 per cent showed toxic granulation. Eight of the samples showed few smudges, one showed none, and the remaining three showed many.

In the 144-hour group, the average blood picture for the 10 cows was 5,643,000 red

cells, 0.6 basophils, 0.25 myelocytes, 0.12 juveniles, 8.0 stabs, 30.6 segmenters, 54.0 lymphocytes, and 4.5 monocytes. Toxic granulation was 1.2 per cent and smudges none to few.

The averages for the group of normal cows and for the eight groups of retained placenta cases are assembled and can best be studied in table 2. No significant deviations from the normal were found in the total red cell or white cell counts or in the hemoglobin values for any of the retained placenta groups. Little variation was found in the percentage of eosinophils, basophils, lymphocytes, or monocytes in the retained placenta groups. All values for these elements corresponded closely to those found for the normal cows and to those given by Dimock and Thompson² and Burnette¹ for normal cows.

In the neutrophilic granulocytes, however, there was a marked deviation from the normal. Values for the segmented neu-

TABLE 2—Blood Picture of Normal Cows and Cows at Various Stages of Placental Retention

| Stage | Total cell count | | Hb. (Gm./ 100 cmm.) | Differential leucocyte count | | | | | | | | | |
|---------|------------------|--------|------------------------|------------------------------|----------|-----------|----------|----------|----------|----------|------------|-----------|---------|
| | R.B.C. | W.B.C. | | Eos. (%) | Bas. (%) | Myel. (%) | Juv. (%) | Stab (%) | Seg. (%) | T.G. (%) | Lymph. (%) | Mono. (%) | Smudges |
| Normal | 5,433 | 6,380 | 8.73 | 4.33 | .8 | 0 | .2 | .33 | 32.7 | 0 | 58.3 | 2.9 | Few |
| 24 hr. | 6,478 | 5,943 | 9.30 | 5.10 | .75 | .15 | .58 | 1.83 | 21.18 | 4.83 | 63.0 | 4.42 | Few |
| 48 hr. | 5,721 | 6,280 | 8.90 | 3.9 | .85 | .43 | 1.7 | 7.1 | 9.2 | 47.3 | 69.2 | 7.5 | Many |
| 72 hr. | 5,759 | 5,950 | 8.80 | 6.3 | .54 | 1.6 | 3.9 | 7.3 | 2.5 | 76. | 71. | 7.1 | Abund. |
| 96 hr. | 5,889 | 7,250 | 9.44 | 5.4 | .69 | 3.6 | 9.3 | 16.6 | 3.25 | 33.3 | 57.4 | 3.3 | Many |
| 120 hr. | 5,002 | 6,179 | 9.06 | 3.38 | .93 | 3.17 | 9.83 | 15.9 | 6.1 | 10.7 | 58.0 | 3.5 | Few |
| 144 hr. | 5,643 | 6,355 | 8.40 | 2.7 | .5 | .5 | .8 | 10.5 | 18.0 | 2.2 | 53.4 | 3.6 | Few |
| 168 hr. | 6,175 | 6,000 | 8.84 | 3.1 | .6 | .25 | .12 | 8. | 30.6 | 1.2 | 54. | 4.5 | Few |
| 192 hr. | 6,113 | 6,217 | 8.62 | 4.17 | 0 | .02 | 0 | 5.7 | 30.5 | 1.0 | 56.3 | 3.2 | Few |

See Key—Table 1.

cells and 6,355 white cells per cubic millimeter; the hemoglobin was 8.4 Gm. per cubic centimeter, and the differential leucocyte percentage 2.7 eosinophils, 0.5 basophils, 0.5 myelocytes, 0.8 stabs, 10.5 juveniles, 18.0 segmenters, 53.4 lymphocytes, and 3.6 monocytes. Toxic granules appeared in 2.2 per cent of the neutrophils, and smudges were few in four samples and lacking in the other samples.

There were 8 cows in the 168-hour group and the average blood picture was 6,175,000 red cells and 6,000 white cells per cubic millimeter of blood. Hemoglobin was 8.84 Gm. per 100 cc., and the average percentage of the different leucocytes was 3.1 eosino-

trophils dropped from an average of 32.7 per cent for the normal to 21.18 per cent for the 24-hour group, 9.2 per cent for the 48-hour group, and reached a minimum of 2.5 per cent in the 72-hour group. They rose slightly in the 96-hour group (3.25%) and the 120-hour group (6.1%) and then rapidly, to give values of 18.0 per cent for the 144-hour group and 30.6 per cent and 30.5 per cent for the 168-hour and 192-hour groups, respectively.

The values for the immature types of neutrophilic elements, the myelocytes, juveniles, and stabs, increased from a percentage of 0.0 for the myelocytes, 0.2 for the juveniles, and 0.33 for the stabs in the normal cows to a maximum of 3.17

for the myelocytes and 9.83 for the juveniles in the 120-hour group, and 16.6 for the stabs in the 96-hour group. Their values dropped from this maximum, as that of the segmenters rose, so that in the 192-hour group, the entire blood picture closely corresponded to that found for the normal cows.

No toxic granulation was observed in any of the neutrophilic elements in the group of normal cows, but toxic granulation appeared in 4.83 per cent of the neutrophils in the 24-hour group, 47.3 per cent in the 48-hour group, reached a maximum of 76.0 per cent in the 72-hour group, and then dropped steadily to give a value of 1.0 per cent in the 192-hour group. The concentration of smudges corresponded closely to the appearance of toxic granulation, being abundant in the 72-hour group, many in the 48- and 96-hour groups, and few in the others.

When the above described deviations from the normal blood picture were plotted on the same graph (fig. 1), it was found that the curves of the juveniles and segmenters followed, in general, the pattern of the toxic granulation curve, and that of the segmenter curve was the inverse of the others. This is what Haden, quoting Schilling, called a "degenerative shift to the left." This degenerative process was reversed and regeneration began between the seventy-second and ninety-sixth hour of retention.

DISCUSSION OF BLOOD PICTURE IN RETAINED PLACENTA

The blood picture found in cases of bovine retained placenta is not at all typical of that found in infective processes, in which the response to the infection normally results in an increase in the total leucocyte count up to three or four times the normal value. In such cases, there is a normal response on the part of the bone marrow to the chemical stimuli from the products of bacterial growth. The result is a greatly accelerated outpouring of granulocytes, particularly the neutrophilic type, to supply the increased need in the tissues. Little toxic granulation is seen in this type of response unless the infection is of a type characterized by high mortality. Haden⁴ stated that toxic granulation is almost uniformly present in lobar pneumonia in man and that it is characteristic

of such a rapidly fatal disease as peritonitis. It was his opinion that toxic granulation in the neutrophils is a phenomenon of degeneration.

The picture observed in retained fetal membranes resembles closely that seen in toxemias and poisoning by amidopyrine, benzol, or other drugs having a selective action on the bone marrow. In the group of retained placenta cases studied, there was a close relation between the rate of decrease in the segmented neutrophils and the increase in the appearance of toxic granulation and immature neutrophils. Increases in the numbers of smudges, or cells too abnormal in morphology and staining properties to be identified, were also observed to accompany the decrease in segmented neutrophils and, since the other leucocytic elements showed little, if any, deviation from the normal values, it is probable that damaged neutrophils constituted a great proportion of these smudges.

It has been suggested that the decrease in neutrophils in the circulating blood might be due to excessive accumulation of these elements in the uterine walls. However, consideration of the subject would lead one to believe that this is not the case. It is a commonly accepted principle of hematology that the blood count is but a picture of a passing parade and that the number of granulocytes in the blood at any one time reflects the ability of the bone marrow to respond to the needs of the tissues for these elements. Once they have left the circulating blood they do not return to it. The conclusion that the number of granulocytes in the blood at any one time is a good index of their rate of release from the marrow is inevitable, in the light of present knowledge.

All of the evidence would seem to indicate that the phenomena observed are the result of a toxemia severe enough to seriously damage the cells in the marrow and to depress the marrow so that the normal numbers of normal cells are not formed and released.

The placenta, which during pregnancy was an intimate part of the fetus from which it developed and from which it derived its circulation, dies soon after the severing of the umbilical cord. When it is retained following parturition, decomposition soon begins and the products of de-

composition are held in close contact with the endometrium which at this time is abundantly equipped with an intricate network of capillaries to facilitate absorption of the waste products of fetal metabolism.

The gradual recovery could be explained by the thickening of the uterine walls, the diminution of the area of absorption, and the decrease in uterine circulation, due to uterine involution, which is rapid after the third day following parturition, even when the placenta is retained. Thus one would expect toxic effects to appear as soon as decomposition of the placenta began and to continue until involution and thickening of the uterus effectively prevented further absorption.

CONCLUSIONS

1) Retention of the fetal membranes in the cow did not cause marked deviations from the normal of the total red cell count, white cell count, or hemoglobin levels of the circulating blood.

2) There were no significant effects on the percentages of eosinophilic, basophilic, lymphocytic, or monocytic elements in the circulating blood caused by retained placenta.

3) Retained placenta in the bovine animal produced marked effects on the neutrophilic elements, resulting in a marked decrease in the normal, mature segmented neutrophils and a marked increase in the immature myelocytes, juveniles, and stabs.

4) This shift toward the immature forms of neutrophils was accompanied by a marked increase in the appearance of toxic granulation in these elements and an increase in the number of smudges.

5) The changes observed were identical with those observed in severe toxic conditions.

6) Since the symptoms of toxemia, as shown by the blood picture, began soon after the death of the retained placentas, and increased in severity until they reached a peak near the 72-hour period, and then subsided gradually as involution of the uterus progressed, the hypothesis that the blood changes observed were due to the absorption of toxins from the decomposing placenta would seem to be justified.

SUMMARY

Total cell and differential leucocyte counts were made on 100 cases of retained pla-

centa. It was found that there was a marked decrease in the mature neutrophils, beginning within twenty-four hours after parturition and reaching its low point at about seventy-two hours after parturition and then returning to nearly the normal level at 196 hours following parturition. This decrease was accompanied by an increase in immature neutrophils and the appearance of toxic granulation, indicating a degenerative "shift to the left." It was suggested that these changes were due to the absorption of toxins from the decomposing placentas.

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"Artificial Breeding"—A Misnomer

Arthur P. Bessey (*Hoard's Dairyman*, March 25, 1946) spans the scientists for using the terms "artificial breeding" and "artificial insemination," as they signify, literally, that the calves born therefrom are artificial or manufactured calves. "Insemination is real, not artificial," the writer says. The objection is well taken in respect to "artificial breeding" but not valid for "artificial insemination," since the insemination *per se* is definitely artificial. The error is in the use of "artificial breeding" since that term does cover a lot of physiology before and after the act of delivering the seed, like planting corn being but a detail of maize production. The proposed use of "scientific" in the place of "artificial" would not only add confusion but it misses the main point.

The Reduction of Uterine Torsions in Parturient Cows

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A vexing problem in bovine dystocias has been the relief of uterine torsions. Methods of reduction include laparotomy, rolling the cow, or swinging the fetus by hand, with or without the aid of epidural anesthesia. DeMott and Roberts¹ describe an improvement of the last method, in which a steel rod is used as an axis to turn fetus and uterus to their normal position. This method seems applicable only when the degree of torsion is slight enough to allow entrance into the uterus for the application of the detorsion rod and of an obstetrical chain.

A method applicable to all degrees of torsion, which has stood the test of time and practice, whether the uterus can be entered or not, was developed by my partner Dappen².

The operation of reducing a torsion in this manner may be visualized by attaching a half-filled sack with its upper edge to a rafter; when the sack is first turned around its longitudinal axis and then released, it will return to its original state of suspension by force of gravity. The uterus of a cow can be compared with this sack. When a cow is suspended from her hind legs, such as in slaughtering, any recent torsion of the uterus will be reduced by gravity.

This reduction of a uterine torsion by gravity will occur even if the cow's hindquarters are elevated only about half as high as would be usual in slaughtering. Surprisingly, the cow suffers very little respiratory embarrassment in this position.

In a bovine dystocia with uterine torsion, the following method has been found most practical for the elevation of the cow's hindquarters and subsequent reduction of the torsion: A block and tackle of appropriate weight is attached to a rafter above the cow's hindquarters. A rafter hook, made approximately like a pair of ice tongs, has been found helpful where a chain or wire attachment could not be looped over the rafter.

Should the cow be stanchioned, her head is released and tied with an easily remov-

able halter. Then a small obstetrical chain, over a heavy towel as padding, is looped around each hind leg above the hock, and the free ends of the chains around the legs are attached to the hook on each end of a small whipple-tree, thus spreading the hind legs apart.

The tackle is hooked to the ring in the center of the whipple-tree and upward traction applied; should the cow be standing, her hind legs are pulled slowly from under her by means of the upward pull applied to her legs below the center of gravity of her body. Finally, she will rest on her side. If the cow was recumbent from the beginning, one proceeds from there, raising her legs until she rests on her back. One then continues raising her until the back forms an angle of at least 45 degrees with the floor. This will leave the shoulders resting on the floor.

Now the free end of the tackle rope is secured and a well-lubricated arm is introduced into the birth canal; should one find that the torsion has not been reduced by gravity alone, a gentle movement of the arm back and forth in the birth canal will overcome any friction which might have prevented the reduction. If necessary, the cow may be raised considerably, until reduction of the torsion is achieved.

The hindquarters may now be lowered and the fetus delivered. It will be found that the elevation of the cow, as described, greatly facilitates many other operations necessary in the delivery of the bovine fetus.

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²Dappen, Roy R., Brooklyn, Iowa. Personal communication.

Pheasants will occasionally mate with guinea fowl and the common chicken. The pheasant-hen offspring is called a pero.

Michiana Clinic

Illustrating the thought expressed in the JOURNAL many times is the schedule of operations mapped out for the spring clinic of the Michiana Veterinary Medical Association held at Nappanee, Ind., on May 22. The list gives a comprehensive understanding of the surgical procedures with which the profession is now preoccupied. The surgical clinic of forty or fifty years ago would have been exclusively equine and the operations would have been ridgling castration, operations for roaring, neurotomy, trephining the facial sinuses, radical operation for quittor, and cunean tenotomy. As time passed and other animals were brought on the scene, the programs might have included restraint of cattle, chloroforming horses, rumenotomy, teat surgery, sterility work (ovarian, uterine, cervical), cesarean section, spaying (heifers, mares, bitches), ablation of the eyeball, hernia operations, catheterization of the equine and bovine stomach, radical operations for poll evil and fistulous withers, caponizing, epidural anesthesia, painless castrations and dehornings, postmortem techniques, pathologic exhibits and demonstra-

tions, and diagnostic methods, of which the program of the Michiana clinic is a fine example:

Cattle.—Methods of dehorning, passing the stomach tube and gastric lavage, methods of restraint, collection of semen for artificial insemination.

Swine.—Castration of boars under chloroform anesthesia, rupture operation, collection of blood samples from the anterior vena cava, administration of anthelmintics with the stomach tube, restraint, operation for prolapse of the rectum.

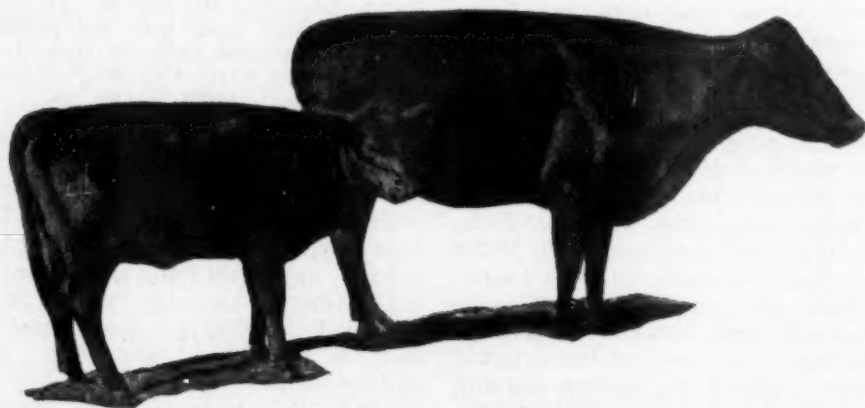
Sheep.—Administration of anthelmintics with the stomach tube, amputation of the tail (docking), castration.

Poultry.—The culturing of tissues, collecting of blood samples, pullorum disease test, fowl-pox vaccination, postmortem technique, demonstrating types of Coccidium.

Small Animals.—Intravenous anesthesia, castration of dog by closed method, passing the stomach tube, ablation of Harder's gland, catheterization of the bladder in male cats and bitches, restraint of cats, application of the Thomas splint.

The main differences between this clinic schedule and those of earlier periods are the total absence of the horse, the prominence given to small animals, and that the membership is mostly rural.

Winner of the Oldest Cow Contest



—Reduced from Aberdeen-Angus Journal

Elm Branch Blackbird 2nd 332776 and her twenty-third calf pose for the camera on the farm of H. A. Cunningham, Pollock, Mo., in December, 1945. According to the herd book, she was born March 9, 1920, and was announced to drop her twenty-fourth calf in March, 1946, or at the age of 26 years. She has dropped a calf every year (18 heifers and 5 bulls) since 1922 save one (1939), when she voluntarily rested. She won the nationwide Old Cow Contest, when entered by Mr. Cunningham's daughter, Vonda.

CLINICAL DATA

Plague—Typhus—Fleas

In the case of bubonic plague, *Ctenocephalides*, spp. and other genera and species of the flea family have been apprehended in the rôle of vector and, in the case of typhus fever, *Pulex* spp., have been commonly regarded as the sole insect culprits. In outbreaks of plague in Puerto Rico in 1912 and 1921, dead rats showing

practice of veterinary medicine during this period of worldwide trouble favorable for the spreading of grievous exotic diseases. Jenaro Maldonado Capriles, of the insular department of health, San Juan, P. R. (*Puerto Rico J. Pub. Health and Trop. Med.*, Dec. 1945), in an article on "The Fleas of Puerto Rico" covering studies

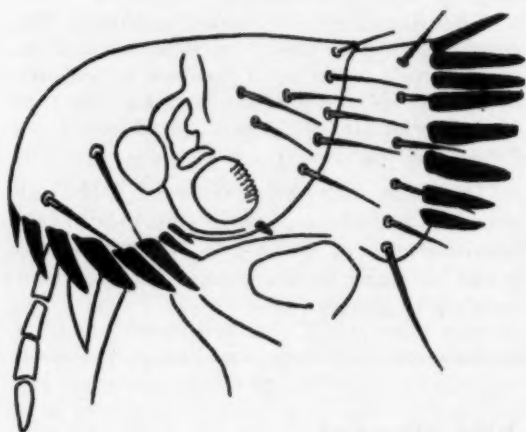


Fig. 1—Schema of the common dog flea, *Ctenocephalides canis*. Short head and pronotal comb (right). Genal comb (left), the first teeth of which are shorter than the rest.



Fig. 2—Schema of the common cat flea, *Ctenocephalides felis*. Long head and pronotal comb (right). Genal comb (left), the teeth of which are nearly equal in length after the first two. Arrow points to eye.

plague lesions were found in certain instances to be infested with *Ctenocephalides canis*, the intermediate host of the tapeworm *Dipylidium caninum*, and also of the nematode *Dirofilaria immitis* of dogs. Moreover, in typhus endemics on that island, from 1940 to 1944, comprising 369 cases, the rat-flea and mouse-flea surveys showed that a certain percentage of the infected rodents were hosts of the common dog and cat fleas, *C. canis* and *Ctenocephalides felis*, the two of which may, therefore, be regarded as vectors of both plague and typhus. Although the danger from these ectoparasites of household pets is greatest during endemic outbreaks, it might be well to keep fleas uppermost in mind in the

made since 1926, pronounces the common fleas of dogs and cats "important vectors of bubonic plague and efficient carriers of endemic typhus." As was pointed out by Lopez, Watt, and Doull in 1942, typical syndromes and Weil-Felix reactions showed that there is endemic typhus in Puerto Rico and the Virgin Islands, mostly, however, in the city of San Juan. Enzoötic and epizootic outbreaks of typhus in rats, resulting in human epidemics, are constant threats and obviously present to a certain extent in every country, not excluding our own. The moral in veterinary practice is that fighting fleas in pet animals is more than a cheerful antipruriginous bathing for the dog's sake. Underestimating the po-

tentiality of a blood-sucking insect belongs to the past, since entomologists are bringing out new facts about them continuously. For example, the human head louse, *Pulex irritans*, has been caught acting as host for *D. caninum*, and so on throughout the arthropod kingdom of carry and sting.

hours from calving—was too short, and the contractures too quickly dissipated. Tetanus due to *Clostridium tetani* is a toxemia, not a bacteremia, and there would have been a toxic damage to the central nervous system to repair.—Editors.]

DDT Dog Soap

London scientists, including F. C. Hymas of Spratt's, Ltd., announce that a concentration of 0.05 to 0.07 of 1 per cent in soap makes a dog bath that will keep off fleas for several months. It not only killed the fleas and other vermin on long-haired dogs, but prevented reinfestation in dogs reexposed to fleas and lice.

Blood of the Thoroughbred

Thoroughbred horses have more erythrocytes, but smaller ones, than cold-blooded breeds and the hemoglobin carrying power per unit volume is higher. The increment is hereditary, not acquired, since the difference was found to exist in newborn foals. The higher content of hemoglobin and smaller cells confers an advantage when running at high speed.—McLeod and Ponder, *Science*, Jan. 18, 1946.

Human Tolerance of DDT

The oral administration of 770 mg. of DDT in olive oil, corresponding to 11 mg. per kilogram of body weight, was tolerated without any perceptible toxic effects in one person (*Pub. Health Rep.*, March 22, 1946). The experiment showed that the drug was metabolized to DDA [di-(p-chlorophenyl)-acetic acid] and eliminated in the urine up to the tenth day in the form of that metabolite, but mainly from the second to the fourth day, or approximately the same as in experimental rabbits.

Azoturia in horses is similar to or identical with ketosis of cattle, says Dr. F. G. Harbaugh, Lubbock, Texas. It is a derangement of metabolism, and results in accumulation of pyruvic acid in the muscles of horses that are heavily fed while not exercising. Thiamine chloride aids in oxidizing this pyruvic acid.

Kimai

An oil distilled from sheep's pellets in Kazakhstan, known as kimai, has long been used for the treatment of scabies in sheep, and was successfully employed by the Russians on farms in the region of Stavropol. The dry distillate contains 30 per cent of phenols and apparently some pyridin. The distillation of the dung can be done under farm conditions. The oil is saponified with caustic soda or potash, and the sheep are dipped in a 10 per cent concentration. At that strength, it killed unspecified mites in five to fifteen minutes.—A. Sinev, F. Sal-tuikov, and V. Gol'Mov: *Kimai—A Popular Remedy for the Mange of Sheep*, *Veterinary, Russia*, 22, (1945): 31-33, abstracted in *Rev. Applied Entomol.* 35, Series B, Part 1, (Jan., 1946): 14.

Acute Tetany in a Jersey Cow

One night in May, when called to see a "crazy cow," I found half a dozen men watching a Jersey cow, which was tied to a post in a box stall, suffering from as severe a case of tetanus as I had ever seen in fifty years of rural practice. Recalling the alleged germicide power of penicillin against *Clostridium tetani*, *in vitro*, I gave her 200,000 Oxford units in the hip muscles as a trial and left her with her 24-hour-old calf, as I expected to return in the morning to give her another dose. Imagine my surprise in the morning when the cow was reported to be normal in every way. There was no relapse of any kind.—O. C. Bradley, D.V.M. (*Nat.* '92), Fairview, West Virginia.

[The diagnosis of bacillary tetanus is ruled out in this case for several reasons. The period of incubation—twenty-four

Hog cholera virus contains two factors, antigenic and pathogenic, which must be recognized, because they are not destroyed at the same rate or in the same manner by heating and by aging.—Dr. R. M. Carter.

Treatment of Small Animals in a Mixed Practice

J. H. KRICHEL, D.V.M.

Keokuk, Iowa

DURING the past six or eight months, there has been considerable discussion relative to reconversion of industry from war to peacetime demands. In our own profession, there have been and are many changes taking place. Veterinarians of the younger generation returning from the armed services have secured new locations or perhaps have made connections with older practitioners in partnerships or other working arrangements. A number of men are still, as several veterans have stated, "just looking" for a location in which to establish themselves in practice.

In these days of housing shortages, many men find it difficult to locate a home for their families, not to mention a building suitable for hospitalization of small animals. Perhaps it would be well to briefly mention or describe our own modest hospital which, thus far, has nicely accommodated the small animal population of Keokuk and community.

Keokuk, a city of slightly over 15,000, is located in the southeastern tip of Iowa. It is not unusual to make calls on large animal cases in Missouri, Illinois, and Iowa the same day. Much of our small animal work comes from surrounding towns where the veterinarians do not wish to trouble with small animal problems of a serious nature.

HOSPITAL AND KENNELS

The office, examination room, and operating room are one, and are contained within the home. The hospital proper is located but 10 feet from the office and contains a combined pharmacy and laboratory, two wards containing 15 kennels, a workroom for clipping, dressing, minor surgery, bathing, etc., a garage, and four runs. This arrangement makes it possible to remove animals to the workroom or to the runs with few steps. Thus, time and effort required to care for and feed patients, and to clean kennels and rooms, are cut to a minimum.

Presented before the Minnesota State Veterinary Medical Society on Jan. 29, 1946, and at the Missouri Veterinary Medical Association meeting on June 10, 1946.

Kennels are constructed of metal lath over wood framework; they are then covered with water-proof cement and enameled. The doors are cold rolled steel, anchored and constructed strong enough so that ten years of use have not made repairs necessary, other than an occasional coat of fresh paint. Each kennel has a copper drain and a ventilator connected with an outlet on the roof. A fan is used in hot weather to provide a flow of air into each kennel. If I were building new kennels at this time, I would duplicate the construction, with the possible exception of the copper drains, which are seldom used and require cleansing if they are not to harbor filth and vermin.

It is poor policy to have the operating room in connection with the examination room or office. The operating room should be kept free from all contaminating influences, and used only for surgery.

Having the hospital located in the home has its advantages as well as its disadvantages. On the credit side, it eliminates the employment of an office attendant, providing the good wife will look after the telephone and office calls when the doctor is out. It eliminates many trips from the home to the office after hours. As to disadvantages, clients are prone to take advantage of the fact that the doctor is at home for meals; office hours are difficult to maintain; and there is little privacy for home or family life. After fifteen years of this arrangement, I would recommend that the hospital be removed some distance from the home. I realize that a successful veterinary practice depends upon the rendering of prompt and efficient service, yet the home life of the veterinarian and his family must be considered.

There are times when the veterinarian, after a heavy day's work with large animals, is ready to drop into an easy chair, pick up the paper, or perhaps take a short snooze, but the contemplated relaxation is interrupted.

RECORDS

While it is good practice to keep records

of large animal cases, it is also a necessity for the conduct of competent veterinary service in the treatment and hospitalization of small animals.

Upon the first presentation of the dog, cat, or other pet at the hospital, it is only proper that a record be prepared containing the name, address, telephone number, and credit rating of the owner. The name, sex, breed, and age of the patient should be entered next. Dates of examination, history, findings, treatments, and any operations should be noted. All distemper inoculations, fecal, urine, and blood laboratory findings, and also radiographs, should be recorded.

Record forms need not be elaborate; the notations may be abbreviated and yet be intelligible to the doctor or an assistant a year or ten years hence.

Keeping records eliminates uncertainty and misunderstanding, and it convinces a client that we know what we are talking about and that we should now proceed with the proper treatment.

EXAMINATION OF THE PATIENT

Early diagnosis is essential to proper and successful treatment; therefore, it is highly important to conduct a careful and thorough examination of the patient at the earliest possible moment. However, if after a careful examination a proper diagnosis cannot be made, it is well to hold the case for further observation. It is wise to take a little time and patience, especially with nervous dogs and cats, in order to gain the pet's confidence before proceeding with an examination.

Regardless of the purpose for which a patient is presented, it pays dividends to check the temperature. Frequently, a rise in temperature will give warning of approaching disease that otherwise would be overlooked.

Note the respiration and the quality of the pulse. Check the eyes and ears; use the otoscope to detect evidence of canker, earmites, new growths, etc. Open the mouth and note condition of the teeth (quite frequently dentistry is badly needed), color of the mucous membrane (whether anemic or showing evidence of canine pellagra), warts, new growths, foreign objects wedged between teeth; and do not forget the tonsils for evidence of acute, subacute, or chronic diseases. Not infrequently arthritis, neuritis, or rheumatic conditions stem from diseased tonsils.

Carefully examine the coat and skin for evidence of parasitic or nonparasitic disease; make skin scrapings where necessary. Note presence of lice or fleas, also condition of the coat—whether soft and oily or dry, harsh, and shedding. If a dermatitis is present, determine whether it is long standing, and if moist or dry.

Palpation of the abdominal region may reveal evidence of a foreign body or perhaps a fecal concretion. Occasionally, the uterus may be manipulated to determine evidence of pyometra; the bladder for cystic calculi, etc.

The stethoscope applied over the heart will frequently assist in diagnosing cardiac disease; over the lungs, it may show evidence of pneumonia, bronchitis, or asthma.

Check the scrotal region for orchitis or other injury; the inguinal region for hernia; the prepuce for discharge.

Carefully examine the anal region for distension of the anal pouches, abscess formation, or new growths. In older dogs, it is well to make a digital examination of the prostate, noting its size and consistency, evidence of rectal pressure or malignancy.

Fecal examination should be a routine measure to determine if internal parasites are present; not infrequently, the sarcoptic mange mite may be found in this manner, providing this parasite is not confused with the beetle found in stale dog foods at times.

A urine analysis is made for albumin, sugar, pus, casts, or crystals. Blood is examined for anemia, leucemia, heart-worm, etc.

X-ray pictures should be taken where foreign bodies within the thoracic or abdominal cavities are suspected; urinary calculi may at times be found in this manner. Unless a fracture of the long bones is easily defined by careful manipulation, a radiograph is in order. Malignancies of the osseous structures, as well as arthritis, can be diagnosed by use of the x-ray.

Many general practitioners, like myself, do not possess x-ray equipment; however, this should not deter a veterinarian from using radiographs as an aid in diagnosis where such are indicated. I have had a highly satisfactory arrangement with a local hospital for the past fourteen years. The work is done by highly trained technicians, the service is prompt, and the cost has been much less than had I owned an instrument and endeavored to do the work.

I find an increasing number of dog own-

ers, especially of the hunting breeds, requesting an annual and, in some cases, a semiannual health audit. In these cases, a routine examination is made and a flat fee is charged. If any evidence of parasitism or disease is noted, the owner is so informed and usually the treatment or service indicated is requested.

HOSPITALIZATION

I do not attempt to hospitalize patients affected with communicable diseases: canine distemper, leptospirosis, the several parasitic skin diseases, etc., of dogs; feline distemper and panleucopenia of cats are treated as outpatients.

Having had the opportunity of observing both methods, namely, hospitalization of communicable diseases (especially distemper), and the treatment of these cases as outpatients, I feel any advantage gained through hospitalization is outweighed by certain disadvantages.

Unless it is possible to have a separate room for each patient, which is seldom provided because of the expense entailed in such construction, distemper and other communicable diseases are usually housed in wards. In the distemper ward, one may expect to find patients affected not only with the virus of Carré but with the secondary or complicating factors so well known to all who treat small animals. In one kennel, there may be a simple catarrhal case wherein the eyes and nose alone seem to be involved; nearby a dog may be suffering from pulmonary complications, another with corneal ulcer, and several dogs showing a profuse diarrhea. Then, lest we forget the nervous complications, perhaps there is a dog or two with convulsions; several crying and jerking with chorea; not to mention a number with several of these complications affecting the poor creatures at the same time.

While many dogs treated as outpatients run through the described chain of complications and die or become cripples, such end results in the hospitalized patients are even more common. Fortunately, indeed, is the owner whose dog has run the gauntlet of the various complications contained within the average distemper ward and made a full recovery. A bill for services rendered following such hospitalization may cause the owner to decide it would be less expensive to purchase a new pet and per-

haps to allow the good doctor to keep the patient for his efforts.

In outpatient treatment, there are fewer of the complicating factors with which to deal. The care of the patient is in the owner's hands. There is less danger of distemper infection among other hospitalized patients. Should the dog develop serious complications, such as meningitis or chorea, it is much easier to convince the client that euthanasia is in order. Last, but by no means least, endeavor to collect for services as they are rendered. A large bill for a badly crippled or dead dog is hard to collect.

CANINE DISTEMPER

In treating this disease, the most common one affecting the canine patient, an endeavor is made to determine whether we are dealing with the virus of Carré alone, or if the case has progressed to one of the complicating stages, so commonly encountered.

Since the advent of homologous canine distemper antiserum reinforced with antisera against some of the common secondary bacterial invaders, a reasonable dose of serum is usually administered, regardless of whether the patient is in the initial stages or affected with a bacteremia as well. Medication for home administration is dispensed according to the symptoms presented by the patient at time of examination. Where there is considerable catarrhal discharge from the nose and eyes, or in pneumonia complications, I still prefer sulfathiazole. I usually give 1 gr. per pound of weight of the patient per day, divided into four doses. After two days, this dosage is cut in half for about four more days. If the patient is progressing well at this time, dispense a tonic or reconstructive and suggest to the client that the patient be not allowed violent exercise, exposure to inclement weather, or baths for a period of at least two weeks. This schedule of treatment serves its purpose reasonably well when distemper cases are complicated with catarrhal or pulmonary symptoms.

The majority of distemper cases are brought in for examination and treatment, with a history by the owner that the dog lies around, sleeps a lot, has no pep, no appetite, chills, and may sneeze at times. Examination may reveal a temperature ranging from below normal to 106 F., depending on the stage in which we find the

patient. Conjunctivitis and tonsillitis may be present with a slight watery discharge from nostrils and eyes; enteric disturbances may or may not be noted.

Following the usual line of treatment, including injection of homologous canine distemper antiserum at 48-hour intervals, the patient, as a rule, makes good progress toward recovery. In about 85 per cent of these cases, the owner will report on the fourth or fifth day that the dog is doing very well because he eats, plays, and is "just like his old self;" therefore, he asks if further treatment is necessary. The owner can't see a thing wrong, is happy, and thinks the doctor has done a good job. Following such a report, I am usually most unhappy, for I know that on the morrow the owner will report that his dog is starting to champ his jaws, is drooling saliva, and may have convulsions of mild or severe nature. Just what should the owner do? How I wish I knew the answer to that one!

For the past eighteen months, 85 or 90 per cent of our distemper cases have developed nervous complications: meningitis, encephalitis, or whatever one may prefer to call them. Regardless of treatment, 90 per cent die or become so helpless or crippled that I administer euthanasia.

The above described condition is not new to veterinarians engaged in treating small animals. A few such cases are to be anticipated following distemper in the dog; however, the heavy percentage encountered during the past year and a half is extremely alarming. The condition is not confined to this community but seems to be a menace wherever small animals are treated.

Rest and sedation with proper nourishment seem to produce as good results as extensive medication and treatment. Many valuable animals are being lost from a condition we are unable to treat successfully.

Next to nervous complications, diarrhea and dehydration are most common; some nervous cases are preceded by a profuse diarrhea. We find the use of Meta Mucil (Searle) a satisfactory treatment.

The following formula is not original with me and is in use by many veterinarians engaged in small animal work:

Carnation milk, 4 oz.; water, 8 oz.; Karo syrup, 1 oz.; Pabulum, 1 teacup; and Meta Mucil, from 1 to 4 teaspoonfuls, well mixed and fed immediately.

If allowed to stand, the mixture thickens

and dogs fail to eat it. If a dog does not eat, simply force feed him. This amount fed several times a day is a maintenance ration for a 40-lb. dog.

Blood and saline transfusions will be found beneficial in combating the dehydration. Intravenous administration of normal canine serum is effective as well as economical, where a blood bank is not maintained.

DISTEMPER INOCULATION

With the present high rate of deaths and cripples in distemper patients, it becomes increasingly important to stress to dog owners the value of preventive vaccination. Some veterinarians feel that distemper inoculation will not prevent the occurrence of encephalitis, and that a large percentage of dogs will not become immune to distemper following vaccination.

Thus far, my experiences with the more modern methods of distemper vaccination have been encouraging and generally satisfactory. I explain to the dog owner that distemper inoculation may not be effective in every case; neither is any other vaccine 100 per cent effective in either man or animals.

It is fully as important to prepare the canine patient for distemper vaccination as it is to have a herd of hogs in proper condition before the administration of hog cholera virus and antiserum. Also, the aftercare is an important factor in each case if consistently satisfactory results are desired. The patient should be at least 3 months of age and free from internal parasites, avitaminosis, streptococcic sore throat, and other infections. The biological product of choice should be kept fresh and properly refrigerated at all times, lest its virulence be lost.

After injection of the vaccine, the owner is advised to be on the alert for a reaction and, if such reaction is noted, to bring the dog to the office for examination, including temperature check which is then noted on the case record for future reference. The owner is cautioned against giving baths and permitting severe exercise for one month. Hunting breeds are not to be allowed in the field for a like period.

Haphazard methods of injecting any and all dogs as presented, without proper examination and preparation, is not to be condoned. Such practices will only lead to

unfavorable reaction on the part of the dog-owning public, should the dog come down with distemper in later life. Also it will encourage dog owners to do their own vaccination, obtaining their supplies from the local druggist or pet shop.

DISTEMPER AND PANLEUCOPENIA IN CATS

Feline distemper is a term which commonly includes several disease conditions affecting cats, and an endeavor is made to separate these into feline distemper and panleucopenia. When cats, and especially kittens, manifest a severe conjunctivitis (eye lids glued shut), occluded nostrils, emaciation, a slight or medium rise in temperature, and linger a week or two before recovery or death, I am inclined to call this feline distemper. Intestinal parasites not infrequently produce symptoms of a like nature; however, these may be eliminated as the causative factor if fecal examination is fairly negative.

When the onset of the disease is rather sudden, with temperatures from 104 F. to 107 F. in the early stages, together with emesis of a rather yellow color, great weakness, crying of the patient when the abdomen is palpated and, perhaps, a history by the owner that the cat sits staring at, or places its forefeet in, a pan of water, it is preferable to call the condition panleucopenia. Death usually occurs in three or four days.

While many of these cases die regardless of method of treatment, farmers as well as city dwellers are loath to part with a good cat; hence, treatment is in order. I administer homologous feline distemper antiserum or perhaps serum of bovine origin. The results are about the same in this practice. Sulfathiazole is dispensed for home administration. The patient is usually dead or well on the road to recovery in two or three days.

It is much better to prevent this disease than to attempt treatment after the patient sickens. Several vaccines on the market, given in two injections seven to ten days apart, have proved satisfactory in our practice.

GASTROINTESTINAL DISTURBANCES

Many dogs find their way to the veterinarian's office or hospital because of a digestive disturbance. The vomiting dog is

rather common and at times difficult to treat successfully.

In the pup, it is well to rule out improper diet or feeding schedules, internal parasites, avitaminosis, etc. In the brood matriarch or unspayed female, pyometra is frequently a causative factor and the use of stilbestrol or surgery is indicated, providing the patient is in condition to withstand such procedure.

Foreign objects often lodge in the gastrointestinal tract, usually within the small intestine. After the object has been located either by palpation of the abdominal region or by radiographs, one may decide whether to use surgery or other methods. In the past, I operated on these cases; however, for the past several years I have frequently adopted the following procedure: The patient is placed in a kennel without food or water. Nourishment and fluids are provided in the form of Ringer's solution, night and morning; the amount depends upon the size of the dog. These fluids may be injected into the loose tissues on either side of the neck, or intraperitoneally.

One or two heaping teaspoonfuls of Meta Mucil, well mixed in two or three ounces of cold water, is given *per os* three or four times daily. Much of this mixture will come up, but some will seep past the object and lubricate the intestinal canal; some of it will accumulate around and behind the foreign body. When this happens, gentle manipulation of the mass through the abdominal wall is indicated. It is surprising to note the size of some of the objects recovered in this manner. It is not unusual to recover large Elberta peach seeds from Cocker Spaniels 4 months old.

In one case, a cat with a history of emesis for eight days was brought to the office for treatment. As the patient was in a comatose condition, a stomach tube was passed and the Meta Mucil mixture was given. Ringer's solution was injected as heretofore described. Within twelve hours, the cat had improved sufficiently so that restraint was necessary in passing the tube a second time; eight hours later, the patient was delivered of a large plum seed. Recovery was uneventful.

I continue this line of treatment until the object is recovered, some times taking as long as five or six days. Few patients are lost if they are received for treatment shortly after trouble is noted by the owner.

Fecal concretions commonly cause emesis in old dogs. In these cases, the patient will be observed to strain as though his bowels are about to move, but the effort is unsuccessful. In time, nature decides if elimination is impossible to the rear, perhaps reverse peristalsis will accomplish the same purpose. Not infrequently, the owner decides a large dosage of castor oil is in order; then perhaps a few doses of Epsom salts and several human cathartic pills for good measure are given; but all to no avail. Eventually, the patient is brought to the veterinarian for relief.

I find the use of White's bitch forceps helpful in breaking down the concretion which is then washed from the rear bowel through use of the colon tube and normal saline solution. Repeating the crushing and washing process will, in time, remove most of these obstructions. Following this treatment, food is not allowed for twenty-four hours; mineral oil is administered by mouth several times daily, and then the patient is placed on a laxative diet. If the prostate is enlarged, castration or large doses of stilbestrol (5 to 10 mg.) are indicated and will, in many cases, remove the cause of this type of obstruction.

Dogs fed on cornmeal mush or bread as the main diet often develop a vitamin B deficiency and may vomit even though they do not show much evidence of ulceration of the gums and oral mucous membranes. Correction of the deficient diet and the addition of nicotinic acid will bring about recovery in most cases.

LEPTOSPIROSIS OR WEIL'S DISEASE

While this condition may occur during any season of the year, it is more common during the late summer and fall months. In the past, I endeavored to control the emesis by using atropine sulfate, then feeding bismuth and pepsin compounds, and injecting saline solutions with dextrose subcutaneously or intraperitoneally, to combat the dehydration commonly encountered in these cases. Since penicillin is available to the profession, it is quite effective in the treatment of this disease which formerly took a heavy toll of the dogs affected.

For a Cocker Spaniel of about 20-lb. weight, I usually administer 20,000 to 25,000 units every four hours for the first twenty-four hours, then drop 5,000 units daily until reaching a dosage of 10,000 units

per dose, which is continued until the patient has recovered. In the average case, no food is allowed, but dextrose and saline solutions, administered night and morning, supply the necessary fluids and nourishment.

POISONING

Each year a number of dogs come to the office for examination and treatment because the owners suspect poisoning. If all suspected poisoning cases were truly such, it would be a dangerous and dismal world in which to live. However, poisoning does occur.

Some time ago, a dog was received in great distress. The owner had used arsenic trioxide to exterminate rats by placing it on buttered slices of bread. She was certain this dog had eaten one of the pieces of rat bait. Perhaps this fellow wished to commit suicide for, upon examination, his urine, as well as exhaled air, was heavily laden with the odor of phosphorus. He must have acquired this agent from some other source; at any rate, he did a good job of it and would have died an agonizing death about twenty-four hours later, had euthanasia not been administered.

While strychnine seldom produces emesis, it is probably responsible for most canine deaths as a result of intentional poisoning by people who dislike dogs. Gastrointestinal lavage alone, or in addition to nembutal given intravenously, as well as warmth to the body, are often helpful. It will save many cases if treatment is obtainable in time.

While discussing gastrointestinal disturbances wherein emesis is a factor, perhaps it would be well to mention nephritis. While most of these cases occur in older dogs, it does also occur in young ones. When dogs become wet while hunting and then chill, acute nephritis often develops which causes emesis. Urine analysis will usually confirm or eliminate nephritis as a factor.

WORMING DOGS AND CATS

One frequently hears the statement among veterinarians that more dogs are over-wormed rather than under-wormed. It is well to make a proper fecal examination with the aid of centrifuge and microscope before attempting to medicate the average

dog for internal parasites. In tapeworm infestation, microscopic examination cannot be relied upon; segments of this parasite are found either in the stool or attached to the hair at the base of the tail. Having determined that the animal *does* have internal parasites and also what type and kind of parasite, medication is administered accordingly.

For hook- and roundworm infestation, tetrachlorethylene with magnesium-sulfate in capsule form is used in suitable dosage, depending upon the weight of the patient. For whipworms, I prefer bu-chlorin. For tapeworm infestation, nemural alone or in combination with arecoline gives satisfactory results in the majority of cases.

Fasting before medication and enemas following treatment are usually indicated. In some cases, it is advisable to feed glucose in the form of corn syrup before, as well as after, the use of tetrachlorethylene. Should patients manifest toxic symptoms following administration of tetrachlorethylene, intravenous injections of 50 per cent glucose solution will greatly aid in restoring the dog to normal.

Thinks a Word of Caution to Veterinarians in Order

Under this headline, *Dog World* recently printed the following item:

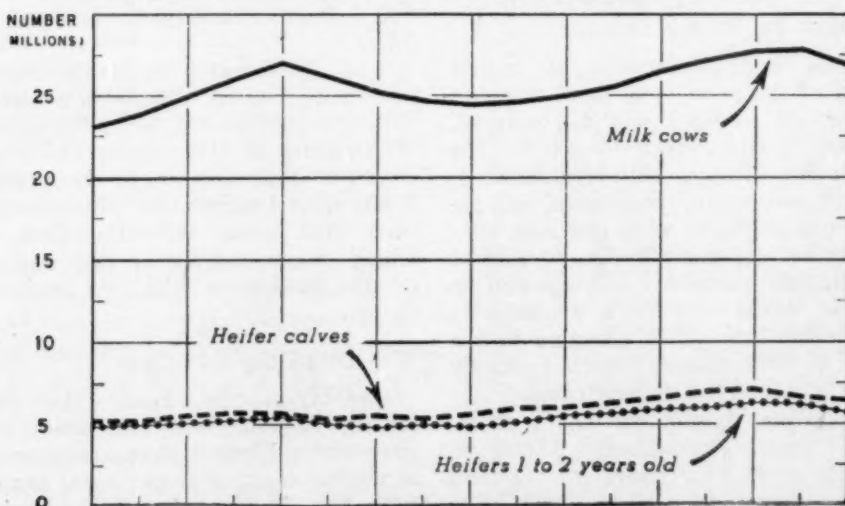
"This is to advise that my very promising young stud Jim's Pride, age 7 months, died, as a result of a sickness lasting about six hours, of toxemia. The dog was given an overdose of toxin and his heart just could not carry the load.

"I would appreciate seeing an article in DW reprimanding 'old head' veterinarians for their extreme carelessness in treatment of valuable dogs. I think it is high time we slacked up on our praise of the wonderful work of veterinarians and give them something to think about."

[Although there is no information regarding the justification for this charge, it does serve to call attention to the type of reports that can be issued if a veterinarian does become careless, or even if unfavorable results—which are bound to occur in a small number of instances—are not explained to the complete knowledge and satisfaction of the owner.—Ed.]

Cows and Heifer Calves on Farms in the United States January 1, 1930, to January 1, 1946

COWS, HEIFERS, AND HEIFER CALVES BEING KEPT FOR MILK COWS:
NUMBER ON FARMS, UNITED STATES, JANUARY 1, 1930-46



—U. S. Department of Agriculture

Sulfamerazine in Veterinary Practice

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THE DISCOVERY by Domagk, in 1932, that prontosil (sulfamido-chrysoidin) would protect mice against lethal doses of streptococci has been followed by the production of more than 5,000 compounds having therapeutic possibilities¹. Careful and continued investigation, quite rightly, continues to eliminate all but the few that are found to be acceptable for the treatment of disease.

New compounds worthy of clinical trial should show promise of providing either fewer toxic reactions, greater specificity than those already used in therapy, prolonged effectiveness with less frequent administration, or smaller initial and maintenance doses. According to published reports, it would appear that sulfamerazine qualifies in these respects and should be of great interest to practicing veterinarians.

Sulfamerazine* (4 methyl-2-sulfanilamido-pyrimidine) is a monomethyl derivative of sulfapyrimidine (sulfadiazine). It occurs as a white crystalline powder poorly soluble in water which can be converted into its readily soluble sodium salt.

Sulfamerazine has been shown, experimentally and clinically, to be effective in infections caused by hemolytic streptococci, pneumococci, meningococci, and gonococci. The attainment of a higher blood level of the drug following administration of sulfamerazine is a result of several factors among which more complete absorption and slower excretion are operative. As compared with sulfadiazine, sulfamerazine is more rapidly absorbed from the gastrointestinal tract and smaller doses are required to attain comparable blood levels². Further, the renal tubules reabsorb approximately 85 per cent of the sulfamerazine which is filtered at the glomeruli, as compared with 65 per cent in the case of sulfadiazine. The significantly lessened renal damage which occurs with sulfamerazine is attributable to the slow renal excretion of the drug, an effect that, in part, may be as-

cribed to the greater solubility of the unacetylated compound and its acetyl derivatives (in urine at a pH of 7 or less) than sulfadiazine compounds.³ These findings have been substantiated by others⁴.

Experimental toxicity studies² on the effect of massive doses administered daily for 36-day periods disclosed that dogs or monkeys suffered no nerve injury. The well-known, highly sulfonamide-sensitive nerve tissue of chickens^{5, 6, 7} sustained no greater injury from the very high concentration of sulfamerazine in the blood than from much lower concentrations of sulfadiazine.

These studies would seem to show that sulfamerazine has the advantage of being less toxic than other sulfonamide compounds capable of being absorbed and that it can be given in smaller doses with the same effectiveness. Two daily doses seem to be adequate for most bacillary infections.

CLINICAL CASE REPORTS

1) Canine distemper, with secondary bacterial infection, presented the usual clinical syndrome of the disease in a litter of 5 Cocker Spaniel puppies 4 months of age. All the animals exhibited the signs of typical, acute, catarrhal respiratory infection. The temperature ranged between 102 and 105 F. Four puppies recovered promptly following the administration of sulfamerazine in 0.5-Gm. (7.7-gr.) doses administered three times daily for two days, after which the dose was reduced to one-half this amount. One puppy developed symptoms of meningitis and recurring convulsions and eventually was destroyed at the owner's request.

2) Septic metritis was observed in a Jersey cow following retained placenta for five days after parturition. The temperature was 102.4 F., and the pulse rate was rapid. After manual removal of the placenta, the uterus was irrigated with warm isotonic sodium chloride solution. After draining the uterus, 15, 0.5-Gm. (7.7-gr.) tablets of sulfamerazine were crushed and then placed within the uterine cavity. Two

*The drug used in this study was supplied through the courtesy of the Medical Research Division of Sharp and Dohme, Inc., Glenolden, Pa.

doses of 8 Gm. (120 gr.) each of sodium sulfamerazine were administered intravenously at 24-hour intervals. The temperature returned to normal within two days. The cow recovered and later had a successful pregnancy.

3) Peritonitis followed delayed cesarean section in a 40-lb. dog. The body temperature of the patient when presented for treatment was 103 F. The wound was cleansed and sulfamerazine powder placed within the peritoneal cavity after which closure was effected by the usual surgical procedure. A 0.5-Gm. (7.7-gr.) tablet of sulfamerazine was administered orally three times a day for two days. The dog made a slow but satisfactory recovery.

4) An 1,100-lb. gelding 9 years of age was stricken with acute strangles. The temperature at the time treatment was begun was 102 F. The abscessed area was irrigated with a 30 per cent suspension of sulfamerazine in water. Sulfamerazine was administered in 4-Gm. (60-gr.) doses every six hours for two days. The gelding recovered completely in four days.

5) Fistula of the withers developed in a 1,000-lb. gelding 11 years of age. Surgical drainage was established and the infected cavity was irrigated with 500 cc. of a 30 per cent aqueous suspension of sulfamerazine. Four Gm. of sulfamerazine, orally, were administered immediately thereafter and repeated in twenty-four hours. The infection gradually subsided and there has been no recurrence to date.

6) Severe trauma was followed by abscess formation in the pectoral region in a 1,300-lb. mare 7 years of age. Surgical drainage was effected and sulfamerazine powder dusted into the infected tissue. Sulfamerazine in an 8-Gm. (120-gr.) dose once a day was administered on three successive days. Recovery was prompt and satisfactory.

7) Distemper developed in a cat 2 years of age. When the animal was first seen, the temperature was 103.5 F. and severe diarrhea and nasal discharge were present. Sulfamerazine in 0.25-Gm. (3.8-gr.) doses was administered twice daily for two days. Sulfamerazine powder was applied to the conjunctivae and the mucous membrane of the anterior nares. The animal responded satisfactorily following this treatment for several days.

8) Coccidiosis occurring in a large rabbitry killed approximately 100 animals before sulfamerazine therapy was begun. Thereafter, 0.5-Gm. (7.7-gr.) of sulfamerazine was administered twice daily to every animal showing symptoms of infection. Treatment for two days checked the disease. One hundred animals were treated, 11 of which died and 89 slowly recovered.

9) Postoperative inguinal abscess developed in 3 Duroc-Jersey pigs that had been castrated by the owner. Adequate surgical drainage was established and a liberal amount of sulfamerazine powder placed in the cavities. Healing occurred promptly.

10) A Holstein-Friesian heifer calf, age 3 months, had been down with painful dyspnea, cyanotic membranes, and extreme prostration for three days. The temperature was 108 F., pulse too rapid and wiry to count, and the animal was apparently almost dead. The case on auscultation and palpation was diagnosed as bilateral calf pneumonia, and an unfavorable prognosis was rendered due to failure to secure more prompt veterinary service. The animal was given 150 gr. of sodium sulfamerazine intravenously and 120 gr. of sulfamerazine *per os* every four hours until four doses had been taken. The next day the animal was up and eating, with temperature, pulse, and respiration practically normal. The animal recovered uneventfully. The drop in temperature in twenty-four hours from 108 to 102 F. following sodium sulfamerazine injection is one worth recording for future use in the treatment of calf pneumonia.

CONCLUSIONS

Sulfamerazine has been found to be very useful in the treatment of a variety of conditions commonly encountered in veterinary practice. Fewer and smaller doses of the compound are clinically effective in comparison with other sulfonamides. Sulfamerazine may be administered orally in tablet or powder form. The powder may be applied locally to infected cavities, or used intraperitoneally.

Sodium sulfamerazine, which is readily soluble in water, may be administered intravenously. It is indicated in (a) critically ill patients that require immediate and adequate medication; (b) patients in whom, for various reasons, it is impossible or diffi-

cult to obtain a satisfactory therapeutic blood concentration of free sulfamerazine by oral administration. The dosage range of from 8-20 Gm. (120-300 gr.) may be adjusted to individual need.

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Fluorine Poisoning in a Horse

An aged draft gelding was in good health prior to a rainy spell in July, 1945, when it began to lose weight rapidly. It continued in poor health until it died Oct. 20, 1945.

Information was received that the owner of the horse was suffering from fluorosis, and that the crops on his farm had been damaged by fluorine. The farm buildings were located about 1 1/4 miles from an industrial plant, where fluorine was released into the atmosphere with the smoke.

The horse was hospitalized Oct. 19, 1945, and the following symptoms were noted: emaciation, dyspnea, extreme weakness (evidenced by shifting of weight from one hind leg to the other), and excessive salivation. The penis was relaxed, extending from the sheath.

The postmortem examination showed intense hemorrhagic colitis, catarrhal enteritis with mucus filling sections of the intestines; fatty degeneration of the liver, and severe emphysema of the lungs.

A second phalanx from the horse, sent to a chemist for a quantitative examination, assayed 1,500 parts of fluorine per million parts of bone. A piece of humerus was sent to another chemist, who found 1,060 parts of fluorine per million parts of bone. Considering that more than 500 parts of fluorine per million parts of bone is abnormal, the reports of 1,060 parts per million in one instance and 1,500 parts in another seem sufficient to indicate fluorine poisoning. To exclude the possibility of metallic poisoning, spectrographic examinations of the liver and intestine were made and were negative.

Fluorine in the atmosphere, even in small quantities, may be concentrated and brought down by moisture or rain, and the rain water may contain sufficient fluorine to be toxic to animals. It was learned that the horse drank rain water which drained from the barn roof. This water might have contained, in addition to the fluorine it collected from the air, fluorine which may have settled in dust on the barn.

Since fluorine is given off from a number of industrial plants, it is quite likely that poisoning of animals from this source occurs more frequently than has been recognized.—*John D. Beck, V. M. D., School of Veterinary Medicine, University of Pennsylvania, Philadelphia, Pa.*

Acute infectious anemia failed to respond to administration of penicillin in a trial by Mott, Stein, and Heishman, Beltsville, Md. (*Vet. Med.*, April, 1946). Treatment was started twenty-three days after the horse showed evidence of infection, during the third temperature reaction, at which time they were able to recognize symptoms premonitory to death. The initial dose was one million units, and this was followed by doses of one-half million units every four hours until six million units had been administered in forty hours.

A concentrated aerosol vapor, which can be spread from airplanes at the rate of 1 gal. per acre, gets good coverage on certain types of foliage because it is broken up into very fine droplets.—*Agric. Res. Admin.*

Dosages of Penicillin for Streptococcus Agalactiae Mastitis

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SEVERAL WORKERS have reported their findings in the treatment of chronic bovine mastitis with encouraging results. At the present time, there appears to be little published data on the dosage of penicillin necessary to bring about elimination of infection from the quarter. The purpose of this paper is to present experiments to determine the dosage of penicillin necessary for the treatment of *Streptococcus agalactiae* mastitis.

Kakavas¹ infused 15 quarters of 10 cows which carried *Str. agalactiae* with penicillin (sodium) and reported ten quarters were freed of the infection. Those quarters which were cured received from 7,800 to 15,900 Oxford units per injection at 24-hour intervals and varied from three to eight injections. Two of the quarters not cured received 15,900 units in a single injection. Three others resisting a cure received 9,000 Oxford units per injection for eight treatments. The amount of diluting fluid was kept standard at 40 cc.

Bryan and coworkers² treated 32 cows infected with *Str. agalactiae*. Two cows infected in all quarters were simultaneously infused with a single dose of 1,000, 5,000, 10,000, and 20,000 units per quarter with all quarters becoming free of streptococcus infection. Thirty cows infected with *Str. agalactiae* were treated with either 5,000, 10,000, or 12,500 units of penicillin per quarter. Six cows received 5,000 units per quarter, 4 of which were cured with one treatment while the remaining 2 cows required two treatments before they were cured. Of the 16 cows which received 10,000 units per quarter, 12 recovered after one treatment. Three more required two treatments but all were freed of the streptococcal infection. Eight cows received 12,500 units per quarter. Five recovered with one treatment, 2 with two treatments, and 1 required three infusions before being cured.

Slanetz and Allen³ treated 59 quarters of 33 cows infected with *Str. agalactiae* with penicillin (sodium). Fifteen of 18 quarters receiving 100,000 units were cured by one treatment. Eleven of 12 quarters were cured by two infusions of 100,000 units each. All ten of the quarters which received four treatments of 100,000 units each were cured. Nineteen infected quarters in 12 cows received 200,000 units per quarter for one, two, or four treatments and all were cured. Six of these cows (10 infected quarters) were cured by one treatment. In all these treatments, the dosage of penicillin was infused with 100 cc. of diluting fluid. The cows treated

TABLE 1—Experimental Plan for the Treatment of Cows with Streptococcus Agalactiae Mastitis

| Penicillin in units | No. cows with 1 q. infected | No. cows with 2 q. infected | No. cows with 3 q. infected | No. cows with 4 q. infected | Totals |
|------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------|
| 1,000 | 6 | 5 | 2 | 2 | 15 |
| 5,000 | 6 | 5 | 2 | 2 | 15 |
| 10,000 | 6 | 5 | 2 | 2 | 15 |
| 15,000 | 6 | 5 | 2 | 2 | 15 |
| 30,000 | 6 | 5 | 2 | 2 | 15 |
| 50,000 | 6 | 5 | 2 | 2 | 15 |
| 100,000 | 6 | 5 | 2 | 2 | 15 |
| Controls | 6 | 5 | 2 | 2 | 15 |
| Totals | 48 | 40 | 16 | 16 | 120 |

q. = quarters.

showed varying degrees of induration and the period of infection ranged from three months to four years.

Murphy and Pfau⁴ treated 52 quarters of 19 cows infected with *Str. agalactiae*. Fifteen quarters of 5 cows were given single injections of 5,000 to 200,000 units in 50 to 300 cc. of boiled water. Of the five quarters freed of infection, one received 200,000 units in 50 cc. of water, two received 31,500 units in 250 cc. of water, and one received 26,000 units in 300 cc. of water. Ten quarters of 4 cows were given five doses of 10,000 units each at regular milking intervals, with six of the quarters becoming free of infection. Thirty-two quarters of 13 cows were treated with five doses of 20,000 units at each milking period. All of the quarters receiving a total of 100,000

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units were cured. The quarters were unselected and exhibited marked differences of induration. Some had been infected for over a year, while the others were infected less than six months.

Barker⁵ treated 32 quarters of 16 cows, which indicated streptococcal infection, by a modified Hotis test. Sixteen of the 32 treated quarters were free of streptococcal mastitis when tested one month following

groups, depending upon the number of infected quarters. Forty-eight cows with only one infected quarter were used, 40 with two infected quarters, 16 with three infected quarters, and 16 infected in all four quarters. In order to be sure that the full quota of cows would complete the project, several extra cows were added to each of these groups. Each group was equally divided into eight classes depending on the dose of penicillin injected. Doses used were 1,000, 5,000, 10,000, 15,000, 30,000,

TABLE 2—Effect of Various Dosages of Penicillin on the Total Number of Quarters Infected with *Streptococcus Agalactiae*

| Penicillin in units / q. | Total no. cows treated | Total no. q. treated | Q. cured by 1 treatment | Q. cured by 2 treatments | Q. cured by 3 treatments | Total q. not cured | Total q. cured | Q. cured (%) |
|--------------------------------|------------------------------|----------------------------|-------------------------------|--------------------------------|--------------------------------|--------------------------|----------------------|--------------------|
| 1,000 | 15 | 30 | 13 (43%) | 1 (3%) | 0 (0%) | 16 | 14 | 47 |
| 5,000 | 15 | 30 | 11 (37%) | 2 (7%) | 2 (7%) | 15 | 15 | 50 |
| 10,000 | 15 | 30 | 13 (43%) | 2 (7%) | 3 (10%) | 12 | 18 | 60 |
| 15,000 | 15 | 30 | 16 (53%) | 3 (10%) | 3 (10%) | 8 | 22 | 73 |
| 30,000 | 15 | 30 | 16 (50%) | 4 (13%) | 2 (7%) | 9 | 21 | 70 |
| 50,000 | 15 | 30 | 12 (40%) | 5 (17%) | 2 (7%) | 11 | 19 | 63 |
| 100,000 | 15 | 30 | 19 (63%) | 2 (7%) | 1 (3%) | 8 | 22 | 73 |
| Controls | 15 | 30 | 0 (0%) | 0 (0%) | 0 (0%) | 30 | 0 | 0 |
| Totals | 120 | 240 | 99 | 19 | 13 | 109 | 131 | 63 |

Q. = quarters.

treatment. Each quarter was infused with 25,000 units of penicillin (sodium) dissolved in 100 cc. of distilled water.

MATERIALS AND METHODS

The cows used in this experiment were from typical Wisconsin dairy herds, all but 1 being privately owned. A majority of them were milked by milking machines, but a few were hand-milked because of some individual irregularity. The herds varied in size from 12 to 46 milking cows at the time of treatment. No attempt was made to locate herds with a high incidence of mastitis. Herds offered for experimental purposes perhaps had more chronic cases than the average herd.

In three of the ten herds involved, the teats were washed prior to milking with chlorine solution of unknown concentration. In two herds, neither the udder nor the teats were washed prior to milking, but any large clumps of material were removed with the fingers before the teat cups were put on the udder. In all other herds, the teats were washed with well water which was frequently changed as deemed necessary by the amount of discoloration present. The teat cups of the milking machines were dipped in chlorine solution before milking each cow in only four of the herds. None of the herds had been systematically tested and treated for streptococcus mastitis prior to this experiment.

One hundred twenty cows with a total of 240 quarters were studied in this experiment (table 1). The 120 cows were divided into 4

50,000, and 100,000 units. An equal number of controls were also used. Cows were chosen at random as to the dose of penicillin given.

When work on a herd started, it was agreed with the owner that all cows found to be infected with streptococcal mastitis should be used in the experiment regardless of the stage of lactation. Cows were assigned dosages in the laboratory before any were examined. Diagnosis was based solely on laboratory findings. As work on each herd was undertaken, the first step was to collect a composite sample from each cow in the herd, whether dry or in milk. All cows which gave positive or suspicious results on the composite test were individually quarter sampled.

Diagnosis was based on the simultaneous use of the Hotis test, microscopic examination of incubated samples, and culturing in a blood agar medium. This latter medium, in the early stages of the experiment, consisted of Difco blood agar base to which was added 5 per cent sterile ox blood. When this medium became unavailable, a medium was prepared in the laboratory consisting of veal infusion extract (of our own preparation) plus 2.0 per cent proteose peptone, 2.0 per cent agar, and 0.5 per cent sodium chloride with the pH adjusted to 7.2. To this medium was added 5 per cent sterile ox blood during the plating process. No quarter was included for treatment unless all three diagnostic tests were positive and the streptococcus isolated from the blood agar plate in pure culture. Two plates were made from each quarter sample, using dilutions of 1:10 and 1:100. Isolations

were made from the blood agar plates into veal liver infusion broth and, after determining morphology and purity of culture, were transferred to blood agar slants to be kept in stock. Identification of every isolated culture was made by biochemical and serologic means. The culture obtained from each quarter was identified in this way, and any which were not *Str. agalactiae* resulted in the quarter being dropped from the experiment and another cow entered in that position.

After a positive diagnosis was made of the infected quarters, treatment was given at once. All penicillin was taken to the farm in the powdered form and put into solution just prior to infusion. All quarters received the dose of penicillin dissolved in 500 cc. of distilled water which had been sterilized by autoclaving thirty minutes at 15 lb. of pressure. The penicillin and diluting fluid were transferred by sterile syringes and needles. Sterile intravenous outfits were used to infuse the quarter

by the gravity method. The apparatus was connected to a sterile teat cannula which was inserted into the teat canal. Quarters in which the standard 500 cc. would not go by gravity were dropped from the experiment. Infusions were made just after milking, except in dry cows which received the treatment without being milked. No attempt was made to massage the udder after infusion because the quarters usually were exhibiting enough internal pressure for the distribution of penicillin.

Fifteen cows were used as untreated controls. These were sampled each week for at least three weeks and tested with each of the three diagnostic tests. Of the 120 individual weekly samples taken from these 15 control cows, there were only three in which none of the three diagnostic tests indicated infection with *Str. agalactiae*.

The first samples of milk were collected one week after the treatment and checked by each of the previously mentioned methods. If the

TABLE 3—Effect of Various Dosages of Penicillin According to the Number of Quarters Infected with *Streptococcus Agalactiae* per Cow

| No. infected q. / cow | Penicillin in units | Total cows treated | Total no. q. treated | Q. cured by 1 infusion | Q. cured by 2 infusions | Q. cured by 3 infusions | Total cured | Q. cured (%) |
|-----------------------|---------------------|--------------------|----------------------|------------------------|-------------------------|-------------------------|-------------|--------------|
| 1 | 1,000 | 6 | 6 | 3 | 0 | 0 | 3 | |
| | 5,000 | 6 | 6 | 2 | 1 | 0 | 3 | |
| | 10,000 | 6 | 6 | 3 | 1 | 2 | 5 | |
| | 15,000 | 6 | 6 | 4 | 0 | 0 | 4 | |
| | 30,000 | 6 | 6 | 4 | 0 | 1 | 5 | |
| | 50,000 | 6 | 6 | 5 | 1 | 0 | 6 | |
| | 100,000 | 6 | 6 | 5 | 0 | 0 | 5 | |
| Total | | 42 | 42 | 26 (62%) | 3 (7%) | 3 (7%) | 32 | 76% |
| 2 | 1,000 | 5 | 10 | 8 | 0 | 0 | 8 | |
| | 5,000 | 5 | 10 | 2 | 0 | 1 | 3 | |
| | 10,000 | 5 | 10 | 4 | 1 | 0 | 5 | |
| | 15,000 | 5 | 10 | 3 | 1 | 2 | 6 | |
| | 30,000 | 5 | 10 | 9 | 0 | 0 | 9 | |
| | 50,000 | 5 | 10 | 7 | 0 | 1 | 8 | |
| | 100,000 | 5 | 10 | 8 | 1 | 0 | 9 | |
| Total | | 35 | 70 | 41 (59%) | 3 (4%) | 4 (6%) | 48 | 69% |
| 3 | 1,000 | 2 | 6 | 1 | 0 | 0 | 1 | |
| | 5,000 | 2 | 6 | 0 | 1 | 1 | 2 | |
| | 10,000 | 2 | 6 | 4 | 0 | 1 | 5 | |
| | 15,000 | 2 | 6 | 6 | 0 | 0 | 6 | |
| | 30,000 | 2 | 6 | 0 | 2 | 1 | 3 | |
| | 50,000 | 2 | 6 | 0 | 0 | 0 | 0 | |
| | 100,000 | 2 | 6 | 3 | 1 | 1 | 5 | |
| Total | | 14 | 42 | 14 (33%) | 4 (10%) | 4 (10%) | 22 | 53% |
| 4 | 1,000 | 2 | 8 | 1 | 1 | 0 | 2 | |
| | 5,000 | 2 | 8 | 7 | 0 | 0 | 7 | |
| | 10,000 | 2 | 8 | 2 | 0 | 0 | 2 | |
| | 15,000 | 2 | 8 | 3 | 2 | 1 | 6 | |
| | 30,000 | 2 | 8 | 2 | 2 | 0 | 4 | |
| | 50,000 | 2 | 8 | 0 | 4 | 1 | 5 | |
| | 100,000 | 2 | 8 | 3 | 0 | 0 | 3 | |
| Total | | 14 | 56 | 18 (32%) | 9 (16%) | 2 (4%) | 29 | 52% |

Q. = quarters.

sample was found to be positive to any one of these tests, the quarter was treated again one week later with the same dosage. Quarters showing streptococci were treated three times with the original dosage before being classed as uncured. Quarters were considered cured after three consecutive negative tests taken at weekly intervals.

RESULTS

This experiment concerns only quarters infected with *Str. agalactiae*. A total of 210 quarters of 105 cows were treated with penicillin (sodium). Fifteen infected cows were used as untreated controls and were routinely tested at the same time and by the same methods as the treated quarters. Treatments were divided into groups according to the dose of penicillin administered and the number of infected quarters per cow (tables 2, 3).

DISCUSSION

The results of this study confirm those obtained by other workers in this field. In this study, it was found that the average results were more consistent than those obtained by most workers. This is probably due to the larger number of quarters involved. It should be remembered that all quarters were assigned doses at random and none were picked on the basis of the induration present in the quarter. The number of quarters treated was not large enough to give similar conditions for each section. Therefore, there were some environmental differences under which the various dosages of penicillin exerted their action. This same variation of physical condition of the udder will be encountered in mastitis therapy as practiced in the field.

The effectiveness of penicillin treatment on the whole was not as great as preliminary reports had indicated. The number of quarters cured totalled 131 in contrast to 79 quarters not cured; or the percentage cured was 63 per cent. The quarters cured by 1,000 units averaged 47 per cent; 5,000 units 50 per cent; 10,000 units 60 per cent; 15,000 units 73 per cent; 30,000 units 70 per cent; 50,000 units 63 per cent; and 100,000 units 73 per cent, respectively. With one exception, there was a trend toward a higher percentage of cures as the dose of penicillin became greater. Perhaps those cows which were treated with 15,000 units per quarter had milder cases than those in

other sections. These averages tend to indicate no great difference in the curative ability of penicillin within this dose range. This may be due to the fact that higher concentrations of penicillin in the udder are excreted more rapidly than lower concentrations. Weirether, Jasper, and Petersen⁶ have shown that there is a rapid decline in concentration during the first ten hours following infusion. They indicated that higher concentrations declined at a more rapid rate from the milk than do the lower concentrations.

One fact was brought out significantly in this series of treatments. Of the total of 131 quarters cured by one to three injections, 99 (76%) were cured by the first treatment. An additional 19 quarters (14%) were cured by a second treatment. A third treatment cured 13 more quarters (10%). It is apparent that quarters which respond to doses of this size will, in the majority of cases, do so with a single treatment. Murphy and Pfau had 100 per cent cures in 32 quarters which were treated at each of five consecutive milking periods. The infection in these quarters must have been overwhelmed by maintaining a high concentration of penicillin over a relatively long period of time, since it is not likely that all these quarters would have been cured by one infusion.

Another factor seems worthy of mention. Quarters of cows infected in only one quarter were cured in 76 per cent of the cases in an average of all dosages (table 3). Quarters of cows infected in two quarters resulted in an average cure of 69 per cent. The quarters of cows infected in three quarters were cured in 52 per cent of the cases. Quarters of cows infected in all quarters were cured in 52 per cent of the cases. Thus, it appears that cows with only one quarter infected will be more likely to clear up following treatment than cows infected in more quarters. It is only logical that cows infected in three or four quarters will have a more firmly established streptococcus flora of longer standing than cows carrying the organism in one quarter. This tendency could be expected to hold true in treating a large number of animals.

No systematic attempt was made to determine the tissue damage which had occurred in the quarters prior to treatment. However, from close observation it seemed that the amount of tissue damage which

had occurred was a major factor limiting the effectiveness of treatment. This is not in agreement with the observations of Murphy and Pfau,⁴ who made comparisons on this basis and found little correlation between extent of tissue damage and effectiveness of penicillin treatment.

The state of lactation had no apparent effect on curative ability of the treatment. Quarters producing highly abnormal milk at the time of treatment were rarely freed of infection. However, in almost every instance, the macroscopic appearance of the milk was greatly improved. Some improved to the extent that the milk appeared normal even though still carrying streptococci. There were no reports of noticeable irritation to the udder in any of the cows treated. After the milk returned to normal consistency, which occurred after one to six milkings, no unfavorable change was noted in the production of milk.

SUMMARY

Two hundred forty quarters of 120 cows infected with *Streptococcus agalactiae* were used in this experiment. The cows were picked at random and assigned a dosage of penicillin (sodium) or utilized as untreated controls. Single treatments were given with 500 cc. of distilled water as the infusion medium. The cows were divided into 8 groups according to the dose of penicillin received. If not cured by the first treatment, the quarter was treated a second or third time.

Thirty quarters of 15 cows were treated with 1,000 units, 14 (47%) of the quarters were cured in one to three treatments; 5,000 units, 30 (50%) of the quarters were cured in one to three treatments; 10,000 units, 18 (60%) of the quarters were cured in one to three treatments; 15,000 units, 22 (73%) of the quarters were cured in from one to three treatments; 30,000 units, 21 (70%) of the quarters were cured in from one to three treatments; 50,000 units, 19 (63%) quarters were cured in from one to three treatments; 100,000 units, 22 (73%) quarters were cured in from one to three treatments. In all of the untreated controls, none (0%) of the quarters became free of the infection. Penicillin was found to be effective as a treatment for mastitis caused by *Str. agalactiae* and can be used

during any stage of the lactation period with favorable results. In those quarters in which a cure is not effected, the gross consistency of the milk is usually improved to the extent that it appears normal. This study indicates that penicillin can be a potent weapon of the veterinarian in treating one of the most costly of all animal diseases.

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Immunity against pneumonia was produced just as effectively by their type-specific polysaccharides as by the pneumococci themselves, in mouse protection tests, and subcutaneous injections were as effective as intracutaneous instillations. The resulting antibody levels remained relatively constant for five to eight months, with booster doses having little or no effect in increasing the amount of circulating antibody, according to a report in the *Journal of Experimental Medicine* (April, 1946).

Overshot jaws (brachygnathism) in any degree is a signal to examine the molar denture for elongations at each end of each arcade.

Observation of Swine Erysipelas in Turkeys (Including the Public Health Aspect and Possible Human Cases)

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DURING the past ten years, several investigators, including Beaudette and Hudson¹, Hinshaw³, Lindenmayer and Hamilton⁴, Madsen⁵, Rosenwald and Dickinson^{8, 9}, Schlotthauer and Thompson¹⁰, and Van Roekel and Bullis¹³, have reported outbreaks of swine erysipelas in turkeys. The disease has appeared in several states but, according to Newsom⁷, it has not been diagnosed in Colorado heretofore.

Swine erysipelas generally develops in adult turkeys during the autumn about marketing time, and its incidence is much more frequent in toms than in hen turkeys. These two items correspond with the observations set forth in this article.

The probable source of swine erysipelas infection in turkeys as shown by other investigators is somewhat obscure, in most instances considered arising from infected sheep grounds or lambing corrals. The author believes the present outbreak arose directly from diseased swine or infected premises due to swine harboring erysipelas organisms.

FLOCK HISTORY

Thirteen thousand five hundred poults were purchased from two Colorado hatcheries: 2,000 in March; 5,800 in April; and 5,700 in June. During the first six weeks, approximately 10 per cent of the poults died, unevenly distributed among the three lots. Mortality was ascribed to omphalitis (unhealed navels or "blue bellies"), unabsorbed yolks, accidents, and other causes. Pullorum disease was not discovered in specimens submitted to this laboratory.

Later in the season coccidiosis, trichomoniasis, and blackhead appeared in the flock at various intervals, accounting for another 5 per cent loss. However, at the time swine erysipelas first appeared in the flock of 2,500 toms, these diseases seemed to have been under control through medication and frequent moving. Following the infection in the flock of toms, swine erysipelas developed in the younger

flock of about 5,000 turkeys, with an estimated 20 per cent mortality.

From the surviving turkeys of the April poults, about 2,500 toms were separated from the hens during early September, approximately one month before the presumed onset of erysipelas. The sexes in this flock of turkeys were about equally divided. The tom camp was established perhaps 1/2 mile distant from the hens and both lots received the same feed and were cared for by the same attendants. The water for the entire flock came from the nearby town supply and was considered of good quality.

Late in September, the first cases of probable erysipelas occurred,—1 or 2 birds at a time, averaging 1 a day. The deaths continued to increase until for three successive days a loss of 15 birds occurred daily. Although the owner had attributed the first fatalities to fighting or trampling, with the increased mortality and the realization of the economic loss involved, assistance was sought to reveal the true nature and source of the trouble.

SYMPTOMS

The onset of illness in this flock of tom turkeys was first observed following a rain and snow storm the latter part of September. The fowl ranged at an elevation of around 5,600 ft., in the foothills near Colorado Springs, Colo., on sloping, sandy loam and adobe soil.*

Because of swollen heads, and viscous nasal discharge, sinusitis was suspected. The owner considered the intermittent fighting to be largely responsible for the crusty, sore heads; however, these head lesions resembled cutaneous erysipelas of swine. Affected turkeys refused to eat, or ate sparingly, lost weight, became listless, their tails and wings drooped, and some walked with a stiff gait. Sick birds often remained on the roost, or separate from the main flock. They became somnolent, their feathers ruffled, and they were dejected in appearance. Sick toms usually showed marked cyanosis with a livid, purplish red

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*Field observations were made by Drs. E. Helny and W. H. Lampe, Bureau of Animal Industry veterinarians, and by the author.

discoloration of the skin on the head, and some had enlarged, gangrenous dewbills† (fig. 1). The caruncles and throat wattles were usually abnormal and diseased. These head lesions were not so marked in turkey hens as in toms. In the flock of 5,000 younger toms and hens mentioned above, the incidence of sickness was later estimated as ten times greater in the toms.

A thin, watery, mucopurulent, greenish yellow diarrhea was frequently noted. Arthritis or swelling of the tibiotarsal (hock) joint was observed in several instances. Limited observations on noticeably sick turkeys revealed subnormal temperatures. Sick birds seldom recovered. Just before death, a thick, ropy mucus was observed in the nasal and oral cavities.

NECROPSY FINDINGS

On October 29, the first dead tom, weighing about 25 lb., was submitted to this

†Various writers and turkey raisers have described the tubular appendage on the dorsal surface of the head as the "leader," "proboscis," "snout," "snood," or "dewbill."⁶

laboratory for examination, and others followed.

Externally, the chief lesions observed were on the head, as described under "symptoms." On incision, these subcutaneous tissues of the head revealed a diffuse, dirty, brick red discoloration without pus formation. The absence of pus development in the joints and other structures involved is one of the characteristics noted in erysipelas of swine and lambs.

Internally, the crop and digestive tract contained little or no feed. The liver showed enlargement, congestion, appeared friable and there were often irregular mottled areas of necrosis. The spleen varied from slightly altered in appearance to a deep, purplish black, softened viscus. Blotchy, diffuse hemorrhages were observed beneath the gizzard lining or serosa. The kidneys were usually enlarged, injected, and somewhat grayish in color. Sometimes the lungs showed a brownish, dusky appearance, and the blood vessels of the brain and cord were generally injected.



Fig. 1.—Tom infected with *E. rhusiopathiae*. Note gangrenous dewbill.

Ecchymotic and diffuse hemorrhages were seen in various portions of the musculature, notably in the thighs, pleural cavity, ribs, and abdominal and pectoral muscles. Blood capillaries were conspicuous. Petechiae and blotchy hemorrhages were evident over the auricles of the heart, and endocarditis seemed in the process of development. Marked enteritis was commonly present, and the intestines contained slimy, mucopurulent, greenish yellow contents.

The above observations were made on 8 dead turkeys. All the pathologic lesions and symptoms noted were not apparent in a single specimen, but constitute a composite picture of the total number examined.

BACTERIOLOGIC OBSERVATIONS

Erysipelothrix rhusiopathiae organisms were isolated from heart blood, liver, spleen, kidneys, bone marrow, brain, and subcutaneous tissues of 8 diseased turkeys (fig. 2); from slaughtered pig 1, from the remains of pig 3, eighty-five days after death, and from turkey carcasses on the premises.

Pigeons and white mice, injected intramuscularly or subcutaneously with small quantities of the culture, usually died within three days, and from them the organism was recovered. Further confirmation of the identity of the organism of *E. rhusiopathiae* was reported by Giltner², of the Washington office.

POSSIBLE SOURCE OF INFECTION

Available literature on probable sources of swine erysipelas infection in turkeys fails to show direct contact with diseased swine. In a number of instances, sheep ranges or sheep bedding grounds were suspected as harboring the swine erysipelas organism.

In the outbreak herein reported, contact with diseased swine on the same premises appears to have been the avenue of infection.

At the time of my first visit on November 1, some 20 head of swine were observed running about the barnyard, less than 200 yards from the camp of the tom turkeys at the time they became ill with erysipelas. With the exception of 2 or 3 old sows, the swine were shoats, ranging in weight from 30 to 50 lb. At least 4 of the younger animals were unthrifty, runty, and showed multiple arthritis. From 2 of these pigs

(1 and 2) showing enlarged joints, blood was drawn for testing. Both of them proved positive for erysipelas in a titer of 1:400.

On December 24, during my second visit to this ranch, 1 of the 2 reacting shoats (1) was destroyed for autopsy. The blood serum of this pig was still positive for swine erysipelas in a titer of 1:400 fifty-three days after the first test. The synovial fluid was likewise positive in the same dilution. Periarthritic fringes were noted in arthritic joints, from which *E. rhusiopathiae* organisms were recovered.

Further history revealed that a sow and 3 pigs had been purchased from a large hog ranch during July. The pigs were described as "runts", and because of their unthrifty condition, they were bought at "bargain prices." About September 1, 1 of the 3 pigs (3) died. This pig came from the same litter and was a mate to the 2 pigs (1 and 2) which gave positive serum reaction on November 1.

According to the statement of the hired man, the pig carcass (3) had remained near the hoglot for several days after death. He said, "Three dogs used in herding turkeys were frequently seen eating on the dead pig, and a few stray turkeys from the main camp a short distance away were also observed picking at the carcass." Finally, the hired man became disgusted and buried the remaining fragments of the pig in an old posthole nearby. At my request, this same hired man located the remains of the pig which died September 1, and on December 24, some eighty-five days after death, we recovered specimens of bones, hair, greasy soil, and maggots from the burial spot 1 foot under ground.

The recovery of *E. rhusiopathiae* germs from a bone of the dead pig (3), together with the fact that its living mate (1) also harbored these organisms, would suggest that pig 3 died from swine erysipelas.

PUBLIC HEALTH PROBLEM

Since *E. rhusiopathiae* organisms are infectious for man, the public health problem entered into this outbreak of swine erysipelas in turkeys. Having diagnosed swine erysipelas in the first lot of toms (about 2,500), the question of marketing the remaining live birds arose.

The owner was advised to notify his pros-

pective purchaser regarding the nature of the disease and the loss that had occurred in his flock. Particular emphasis was placed on the fact that the disease in the turkeys was infectious to human beings, and that sanitary precautions should be observed to prevent human infection among those engaged in killing, picking, and dressing them. As the toms were in prime condi-

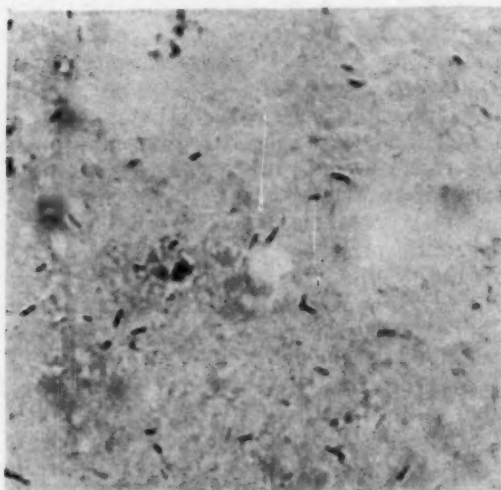


Fig. 2.—Gram-stain smear, spleen from infected turkey. $\times 1500$.

tion, the owner was entitled to market the healthy birds which showed no evidence of disease; however, he was advised that they should be sold subject to careful inspection and rejection of any fowl considered unfit for food.

During the process of marketing the toms, several birds died en route to market. The firm engaged to prepare the turkeys for shipment sent 2 of these dead fowl to this laboratory for examination. They were diagnosed as swine erysipelas, the same as those previously submitted directly by the owner.

With the definite realization that the turkeys in question had swine erysipelas infection, the marketing firm routed the dressed turkeys to a processing plant, where they were drawn, boned, and sterilized for canning. This procedure was supervised by inspectors for the dairy and poultry branch of the Production and Marketing Administration, U. S. Department of Agriculture, who inspected each individual bird before processing. From the lot, 5 questionable fowl were submitted to

Dr. L. VanEs¹¹, of the University of Nebraska, Lincoln, who recovered *E. rhusiopathiae* bacilli from 3 of the specimens. Doubtless, the heat applied during the canning process destroyed any viable organisms which may have been present in the consignment; hence the consumption of the canned turkey was probably without danger to the public health.

POSSIBLE HUMAN INFECTION (ERYSIPELOID)

Having recovered *E. rhusiopathiae* organisms from infected turkeys and swine on the same premises, our attention was directed to the health of the owners of these animals, a man and his wife. Each of these persons had close contact with their turkeys from the time they were poults.

Case 1.—The wife said that she fed and cared for the poults last April until her hands became so sore she could no longer work with them. During this time, she was under the care of a physician about six weeks for the treatment of "erysipelas." The true nature of the trouble remains in doubt. It might have been streptococcus, staphylococcus, or possibly swine erysipelas infection (erysipeloid). Recovery was slow without marked recurrence, although occasionally she still has itching sensations different from anything she ever experienced previously. Symptoms seemed more aggravated at night and, during the summer, purple discolorations appeared at times on the body. Loss of weight was also reported.

Case 2.—The owner of the turkeys, husband of case 1, complained of intermittent attacks of "athlete's foot" for some years, gastrointestinal disturbances, nervousness, "heart burn", and a dull frontal headache for the past several months, a symptom not previously experienced. A burning, itching condition of the skin and a distressing cough became more pronounced during the period of turkey picking. Late in 1945, a fine rash occasionally appeared on this man's face and itching occurred over the body, which was attributed to "flea bites," yet he never discovered any insects.

We failed to recover *E. rhusiopathiae* bacilli from the blood of the owner or his wife.

TREATMENT

Inconsistent results are reported by most investigators in treating erysipelas in turkeys with swine erysipelas antiserum.

In our efforts at treatment, only a few

sick toms received swine erysipelas antiserum (1 cc. per lb. weight). Others received 50,000 units each of penicillin. While some good may have resulted from this medication, conclusive evidence was not obtained.

ECONOMIC LOSS ASCRIBED TO SWINE ERYSIPELAS

The owner of the flock of swine erysipelas infected turkeys estimates he lost around \$15,000 as a result of this disease, as follows:

| | |
|--|----------------|
| 1) Deaths in the flock of toms (estimated 12% loss) | \$ 2,700 |
| 2) Deaths in younger turkeys (perhaps a 20% loss) | 4,000 |
| 3) Loss in weight due to disease (including 2,500 toms and the younger flock of 5,000 toms and hens) | 4,600 |
| 4) Reduced selling price due to evisceration, boning, and canning | 2,500 |
| 5) Medicine, swine erysipelas antiserum | 1,000 |
| 6) Extra labor in vaccination | 200 |
| | <hr/> \$15,000 |

Prospective turkey raisers should recognize the potential danger from swine erysipelas infected animals or premises, when planning their turkey raising activities.

SUMMARY

Following a rain and snow storm late in September, swine erysipelas developed in a flock of 2,500 tom turkeys near Colorado Springs, Colo. Later, the disease spread to a flock of 5,000 younger toms and hens. Death loss in this flock was about ten times greater in the toms than in the hens. Symptoms and autopsy findings are described, and correspond to published reports of swine erysipelas in turkeys.

Erysipelothrix rhusiopathiae organisms were recovered on culture from 8 dead turkeys, and identified bacteriologically from the blood, liver, spleen, kidneys, bone marrow, brain, and subcutaneous tissues of the head.

Infected pigs purchased during the summer appear to be the probable immediate source of infection of swine erysipelas observed in this flock of turkeys.

Swine erysipelas bacilli were isolated and identified from a slaughtered runt pig on

the premises, from turkey carcasses, and from an exhumed pig bone. Dogs and turkeys were seen eating on the pig carcass before burial.

The public health aspect of the problem was considered. Healthy fowls were marketed subject to federal inspection. Questionable birds were rejected. Because the disease is infectious for man, slaughtered turkeys were eviscerated, boned, and sterilized by canning.

Experimental treatment of a few sick toms was conducted with swine erysipelas antiserum and penicillin without conclusive results.

The owner of the flock claims he lost \$15,000 as a result of the outbreak of swine erysipelas in his turkeys. Mortality ascribed to erysipelas was estimated at 12 per cent in the flock of 2,500 toms, and 20 per cent in the younger flock of 5,000 turkeys.

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Brucellosis in a swine herd was controlled by testing at 1:10 and 1:25 at breeding time. This was repeated before the sows were too piggy to ship, in each instance eliminating the reactors.—Dr. P. T. Gambrel.

More than 500,000 calves were vaccinated with strain 19 in 1945, an increase of about 28 per cent over 1944.

NUTRITION

True Scurvy in the Dog

NORMAN L. GARLICK, D.V.M., B.S.

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SCURVY is rare in animals. During the last fifteen or more years, only one case of canine scurvy was treated in our hospital. The case was so unusual that I decided to report it.

The literature contains few references to canine scurvy, some contending that true scurvy does not occur in the dog. This is not the case. Dorland describes human scurvy as "a nutritional disease due to dietetic errors and marked by weakness, anemia, spongy gums, a tendency to mucocutaneous hemorrhages, and a brawny induration of the muscles of the calves and legs."

Hutyra, Marek, and Manninger describe scurvy as spontaneous vitamin C deficiency which occurs, among animals, only in dogs and pigs, and in them very rarely. They supply the description as follows: "Adult scurvy is characterized by swelling and ulceration of the gums, loosening of the teeth, and hemorrhages; infantile scurvy by swollen, injected, and bleeding gums, subcutaneous effusions of blood, and changes in the bones and teeth."

The cause of scurvy is considered to be a lack of vitamin C in the diet. This may occur in dogs as the result of prolonged feeding with damaged foodstuffs. Another possible cause is a diet composed exclusively of dog biscuits, cooked cereals, and animal food, or of milk or meat which has been cooked too long. Other combinations also have been blamed.

Vitamin C, or ascorbic acid, is found in meats when raw or slightly cooked, in vegetables, juices, particularly green vegetables, and tomatoes. Citrus and other fruits contain considerable quantities. Due to the fact that vitamin C is easily oxidized, foods cooked under high tempera-

tures, or subjected to prolonged heat, lose practically all of their vitamin C.

Dogs must have an adequate intake of vitamin C. The fact that scurvy is rare in dogs does not mean that vitamin C, from good natural sources, need not be included in their diet. It is generally believed that sufficient vitamin C is synthesized in the dog to take care of all normal requirements. If that is the case, the synthesizing mechanism seems to fail in certain instances.

The true scurvy case I am reporting occurred in a Spitz bitch 6 years of age and weighing about 35 lb. She was first presented to us in May, 1945, with the following symptoms: extensive cutaneous and subcutaneous hemorrhages, bleeding gums, anemia, and hemorrhagic diarrhea, temperature always normal, blood watery, clotting time slow, weakness, and anorexia. Due to the slow clotting time and the watery consistency of the blood, we decided that a vitamin K as well as a vitamin C deficiency might be present. Consequently, intramuscular injections of these two vitamins were given. The vitamin K was supplied twice daily. Each dose consisted of 1 mg. of 2-methyl-naphthoquinone in sesame oil. The vitamin C was given twice daily as sodium ascorbate, each dose being equivalent to 100 mg. (2,000 I.U.) of ascorbic acid.

The recovery was rapid and uneventful. On the fourth day, the dog was able to eat normal food and the relative hemoglobin was almost normal. The subcutaneous hemorrhages disappeared completely after six days. The dog was released from the hospital on the tenth day in good health. Dietary suggestions were made at that time, but they were not exact and the diet

was not as carefully controlled as it should have been.

After the first attack, the diet consisted of the following foods, many of which were obtained from a restaurant kitchen:

Canned tomato juice (1 cup three times a week), milk (sweet or sour), irradiated yeast (four or five cakes per week), peas, carrots, string beans, cottage cheese, ground round steak (raw or cooked), knuckle bones (raw), eggs (raw or cooked), cooked T-bone steak bones, boiled beef and beef broth, small amounts of canned salmon, chicken livers and gizzards (cooked), chicken meat (cooked), dry hard rolls, cheese, and liverwurst.

Occasional tidbits were stolen, which included cookies, chocolates, dates, etc. This dog liked chicken feed, particularly mixed scratch feed. Depraved appetite was also present, as indicated by her occasional ingestion of chicken feces.

On Jan. 16, 1946, this dog was again presented for the treatment of scurvy. At this time, the symptoms were as follows: innumerable subcutaneous hemorrhages, some measuring as large as 6 inches in diameter. Blood exuded from the skin, particularly over the abdomen and pudendum. The hemorrhages were persistent, soiling her bedding with many drops of blood. Anemia was present. Under the lips were large, bright clots due to hemorrhages around the teeth at the gum line. The dog was weak, but there was no hematuria nor hemorrhagic diarrhea. No ulcers were observed in the mouth other than at gingival margin.

Treatment was started immediately, using only sodium ascorbate. Doses equivalent to 100 mg. of ascorbic acid were given by intramuscular injection twice daily. No vitamin K was administered. In two days, the blood had stopped dripping from the skin and the subcutaneous hemorrhages were visibly smaller and paler. At the end of four days, all evidence of hemorrhage had disappeared. Treatment was continued for three days following apparent recovery and the dog was discharged, January 23. Home treatment included the use of 100 mg. of vitamin C *per os* once daily, to be given indefinitely.

CONCLUSIONS

In light of the foregoing facts and case history, it is evident that scurvy occasion-

ally occurs in dogs. True scurvy responds almost miraculously to vitamin C therapy. Vitamin K did not shorten the recovery time. The fact that the principal foods used in this case were obtained from restaurant "left-overs" indicates that the foods were probably cooked too long, or at too high a temperature to retain their vitamin C content. This case indicates that unless green vegetables are included when the feed of dogs is obtained from restaurants where food is kept warm for long periods and sometimes reheated to high temperatures, scurvy could develop. There is also a possibility that many subclinical cases of scurvy exist in dogs which must rely on this and other deficient sources of food.

Potatoes and Sweet Potatoes for Livestock

Food chemists have wondered why potatoes and sweet potatoes were not used extensively for feeding livestock, in view of their high content of carbohydrates and their abundant yield per acre without "mining" the soil. Of course, their lack of protein, minerals, and vitamins A and D accounts for the discrimination. Shortage of the more balanced crops, and the ease with which feeds can be balanced with mathematical precision, are changing the former attitude. Roughly speaking, 4 lb. of these tubers with 1 lb. of grain make a useful and economical feed. Work carried out in the southern states on sweet potatoes and, in Idaho, on potatoes and the fact that wasted culls can be salvaged by feeding them to livestock will encourage their use as the principal source of carbohydrates. As E. F. Rinehart, University of Idaho, has shown, culled potatoes contain about the same amount of digestible material as corn silage and, if used to supplement pea meal, soybean meal, linseed meal, grain, or good quality of hay, the mix is satisfactory for feeding beef cattle and hogs—providing frozen, sunburned, and heavily sprouted potatoes are rejected.

Cut up with fibrous forage for silage, 4 lb. of potatoes is equal to 1 lb. of grain as a dairy-cattle feed.

EDITORIAL

Army Needs Veterinary Officers

It is believed pertinent and proper, at this time, to call the attention of draft-age veterinary registrants to the following facts:

1) The Procurement and Assignment Service for Physicians, Dentists, and Veterinarians has been terminated and the State Veterinary Committees have ended their work. There is, therefore, no official professional agency to pass upon the essentiality of registrants, and determinations of such matters will be decided by local boards.

2) Through the normal operation of Selective Service under present induction criteria, some veterinary registrants may be classified or reclassified for induction. It would seem desirable for draft-eligible registrants to review their own status and make applications for temporary commissions in the Veterinary Corps, while the opportunity presents, in order that they may serve in a professional capacity.

3) A considerable number of veterinary graduates who received part of their professional education under the ASTP, whether or not they actually graduated under that program, were not commissioned upon graduation but entered private practice of an essential nature and have had no active military duty. It is believed that there is a definite moral obligation upon many of these graduates to seek commissions at this time in order to help meet the needs of the Veterinary Corps and to speed up the release of those veterinarians who have served for extended periods.

A statement regarding current needs of the Army for veterinary officers appears in the "Veterinary Profession and the War" section of this issue. For those who feel that "the war is over," the authorized procurement objective for appointment of 200 first lieutenants in the Veterinary Corps, AUS, for the duration plus six months may not be immediately understood. But, in the light of the services with which the Veteri-

nary Corps is charged by Army regulations, plus the current and prospective separation rate of veterinary officers with extended active duty, it is apparent that the announced needs must be met.

The veterinary profession is obligated to supply, as long as may be necessary, the personnel needs of its branch of the military service if this important part of professional work is to carry on. Even more important, certainly, for the individuals affected, is the necessity of supplying replacements for those veterinary officers, formerly established in private practice and positions, who have now had extended active duty and who should, as a matter of common justice, be released as soon as possible.

The difference in the present length of service criterion for release of veterinary officers (39 months) as compared to medical officers (30 months) has been the source of several complaints to the AVMA office as "discrimination" against the veterinary branch. Investigation has revealed no discrimination whatever, but simply a factual condition predetermined on the basis of personnel resources and the work to be done by the two corps respectively. In short, there is no overall basis for separation which can be applied equally to various branches of service. In less than a year since V-J Day, more than two-thirds of all veterinary officers on active duty at the height of World War II have been separated from military service. This rapid reduction is reflected in the present actual need for new appointees in temporary grades and in the desire of the Medical Department to lower the release criteria for veterinary officers as rapidly as conditions permit.

Recently, it became necessary for the War Department to ask Selective Service headquarters for the induction of 1,500 dentists to meet Army requirements. Those registrants selected are to be non-fathers,

aged 20 through 29, who have not already had foreign military service or who have had less than six months service at home, not counting any time spent in colleges under the service training program.

It is greatly to be hoped that resort to induction of veterinarians can be avoided.

The Journal Dons New Raiment

The new and specially designed front cover in which this issue of the JOURNAL appears has been adopted following several months of consideration. It represents not only a considerable change since the format and content of the JOURNAL were enlarged and revamped in July, 1938, but also a return to the contents-on-cover style. This style has the definite advantage of convenience for the reader and is in line with modern standards for publication in our field.

Incidentally, the "V-for-Veterinarian-and-Victory" cover which was originally developed for use only on the "Convention Number" of July, 1942, was so favorably received that it has been continued until the present.

The purpose of the change is not merely change itself, but is in accord with the policy and endeavors of the Committee on Journal and the editorial staff to constantly improve the Association's publications and their value to members.

Home Rule and Contagious Diseases

It would seem reasonable for the planners of world order to inquire to what extent diseases of livestock are responsible for the low standards of living which they hope to improve and, also, to study intelligibly the countries' attitudes toward control measures. Some of the colonial possessions and mandated spheres of influence which are clamoring for home rule are not only indifferent but hostile toward reforms in livestock sanitation. There is some danger that absolute freedom in some centers of grave infections would bring grave repercussions to the rest of the world, rapid transit and intensified commerce being what they are. In such circumstances, non-interference may not be a universal blessing.

The programs of the British in South and East Africa, of the French in North Africa and Asia, and of the Americans in

the Philippines might well be set apart for close examination as to the essentiality of livestock sanitation as a first principle in the granting of home rule. Moreover, these same programs for mastering animal diseases might be examined to advantage in respect to the effect of reverting to prior conditions before lowering the bars in the name of freedom. In planning a new political order, the weight of livestock sanitation in the building of the western nations of this day ought to be examined with a knowing eye and alert mind. Or, perhaps, the best way is to "Consult your veterinarian."

A free-seeding strain of buffalo grass, the grazing plant that made a beef empire out of the vast semiarid regions of the United States, is being developed by the Bureau of Plant Industry of the USDA. Bunch, or buffalo, grass is a balanced ration for cattle.

Nordlicht, German Thoroughbred



—Thanks to Science News Letter

Nordlicht, the 5-year-old German Thoroughbred that never lost a race, is said to be the finest horse ever born. He was brought to Front Royal, Va., by the Army after capture in the invasion outre Rhine, but is refused for registry by the Jockey Club and, therefore, cannot have his blood introduced into the American Thoroughbreds. The decision is final and not criticized here, but it does raise the question of "What's the matter with new blood?"

Diverting Feed from Livestock

The long established relationship between grain farming and livestock farming, disrupted in a day by executive order, is likely to go into the pages of American history as Big Blunder No. 1 of the UNRRA, fine as the intentions may be. The false hope of relieving underfed millions with utter indifference to the far-reaching effect of that change in the long run is truly unfortunate, perhaps the greatest misfortune of World War II. It is easy to start on this backward step in human subsistence and progress, but it will be difficult, if not impossible, to regain the lost ground. Domestic animals are not made by simply shifting the belt to another production line. It is remarkable how many ways man can find to destroy himself by both slow and rapid methods, but only the slow way back to oriental ways of life belongs in our horizon. Oh, yes, this is only a temporary expediency, but it takes three years to raise a cow and probably longer, if ever, to get a grain farmer in the notion to raise one. In all history, when nations ceased to push livestock with all of their might, they were starting to vanish. It's the man, not the rope, that leads the cow to market.

UNESCO

The United Nations Educational, Scientific, and Cultural Organization is designed to develop "the possible future rôle of scientists in international relations." "Prior to World War I," says *A. A. S. Bulletin*, "scientists had little direct influence on international affairs, primarily because they were interested in exploring the universe rather than in developing means for national defense or products of importance in international commerce." In short, scientists (in this country) discussed pure science and (quoting) "largely ignored its technological application." Although the National Academy of Science was established by Act of Congress in 1863 for the stated purpose of advising the government on scientific matters, it was rarely ever consulted until President Wilson created the National Research Council by executive order as a war measure, which, needless to repeat here, marked the birth of real American science. Between the two wars, sci-

entists staged an almost perfect drama on world harmony and good fellowship, but they came upon the greatest of all wars none too well prepared in the application of accumulated knowledge by reasons of having no sense of contact with political questions. The UNESCO has undertaken to develop a vast but uncultivated field; it assumed a stupendous responsibility concerning the intellectual, moral, and political problems confronting the world's population. May the biological and agricultural sciences be taken along and not underestimated.

The forming of a society of world-wide jurisdiction devoted to the application of science is a sign that scientists are not going to keep their tongues silent and pens dry (Carlson) any longer. The time-worn charge that science has always been a long jump or two ahead of its application turns out to be an indictment of itself. It is now clear that had UNESCO existed before the atomic bomb scared the world stiff, the machine politician (jittery soul) would have had a lot of fun telling the folks at home that the UNESCO was a society of brain trusters, with italicized emphasis on its unworthiness, instead of begging (as now) the whole kingdom of science to come under his fluttering wings for political regimentation.

The UNESCO was privately conceived, privately organized, and will be privately supported. Its constitutional objective is simply "the scientific application of science." What a field! Is it too much to expect that such a society will come upon the antiscientific practices in food production, food hygiene, and disease control among man's animals?

What's wrong with agriculture? Complaints of agriculture from coast to coast boil down to a single grievance, namely, government interference. Yet, no group of citizenry has asked for help oftener and needed it more than the farmers. The records of Congress from George Washington to Harry Truman make up a long chain of pleas for "government interference."

The poultry industry of the southeastern states represents a greater value than the dairy industry of the same states.—Dr. J. K. MacNamee.

CURRENT LITERATURE

ABSTRACTS

A Survey of Literature from Scandinavia

[The following material presents a survey of some bacteriologic observations in Scandinavian veterinary science during the years 1940 to 1945. It was prepared by J. Egehøj, chief veterinary surgeon in Graasten, Denmark.—The Editors.]

Corynebacterium.—This type of infection has assumed additional significance since Holth has demonstrated that it causes inflammatory changes, similar to those of tuberculosis, in the mandibular lymph nodes of swine.

The microbe isolated from pigs is identical with *Corynebacterium equi*, and N. Plum has suggested (Maanedsskr. Dyrl., 51 (7), (1939): 178-185) that it be renamed *Corynebacterium Magnusson-Holth*, because Magnusson was first to isolate the organism in horses and Holth later showed that it is found with much greater frequency in swine.

Plum reports (Maanedsskr. Dyrl., 52 (10), (1940): 245-264, and (11), (1940): 276-296) that mandibular lymph nodes were studied from one series of 130,358 swine, of which 667 showed changes caused by *Corynebacterium*. In another series of 4,298 lymph nodes presenting tubercle-like changes, 972 cases were due to bacteria of this group. He found that, in Danish swine, these mandibular lymph gland changes were most numerous from June to October.

H. E. Ottosen has examined 2,235 lymph nodes containing tubercle-like lesions, and found (Maanedsskr. Dyrl., 52 (4), (1940): 81-94) that they had been caused by *Corynebacterium* in 1,564 instances.

Corynebacterium may be isolated from lesions of this type by using different mediums. Agar alone may be used successfully only on fresh material, while the addition of sodium or potassium tellurite (0.01%) is suitable for cultivation of old or contaminated specimens, because the tellurite has a restrictive effect on bacteria other than *Corynebacterium*. Ottosen (Skand. Vet.-tidskr., 35 (10), (1935): 636-654) has successfully isolated and cultivated *Corynebacterium* on tellurite agar from lymph nodes, soil, manure, etc.

Johs. L. Flatla has described (Norsk Vet.-tidskr., 54 (5), (1942): 249-276, and (6), (1942): 322-337) an enzootic disease among foals caused by *Corynebacterium*, which differs

from common diseases in that it attacks foals between the ages of 1 and 4 months.

Corynebacterium has been considered a universal parasite on the pharyngeal mucous membranes, in the intestine of swine, and in soil. Ottosen, however, examined the intestinal content from 60 swine and the pharyngeal mucous membranes from 43 others and succeeded in isolating *Corynebacterium* from only one case. He therefore concludes that the organism cannot be classed as an obligate saprophyte of swine. He also examined 205 soil samples, from which he isolated 24 pure cultures of *Corynebacterium*, but it is significant that he collected soil samples only on premises where the swine were known to be suffering from this infection.

Plum tried to infect, experimentally, 141 healthy young pigs, using pure cultures isolated from spontaneously infected swine and horses. He found pure cultures to be almost nonpathogenic, and concluded that mandibular lymph node alterations could be produced only when another primary infective agent was present as well.

Flatla showed the organism to be infective for horses when administered orally or subcutaneously. Oral dosage, adult and foal, resulted in enteritis in about fourteen days, and ended in death one week later. Subcutaneous injection was followed by painful infiltration in twenty-four hours, a simultaneous rise in temperature to 40.2 C., and formation of an abscess in one week.

Serologic investigations, in the form of agglutination and complement fixation tests, were run by Ottosen and O. Grini. A study of 17 strains by Grini (Skand. Vet.-tidskr., 32 (5), (1942): 305-314) fell into two groups: one contained three horse and five swine strains, the other five swine strains. Ottosen studied serologic behavior of 217 strains isolated from swine, horses, cattle, soil, and man, and found the highest titer obtained 1:240, the lowest 1:30, with most strains showing agglutination at 1:60.

Classified on the basis of agglutination, the results are shown in table 1.

TABLE 1

| Strain | No. Cultures | Isolated from | | | Miscellaneous |
|--------|--------------|---------------|-------------|---------------|---------------|
| | | Danish swine | Amer. Swine | Swedish Swine | |
| 1a | 113 | 96 | 4 | 3 | 9 |
| 1b | 27 | 17 | .. | .. | 1 |
| 1c | 27 | 22 | 4 | .. | 1 |
| 2a | 28 | 21 | .. | 3 | 4 |
| 2b | 28 | 13 | .. | .. | .. |
| 3 | 1 | .. | 1 | .. | .. |
| 4 | 1 | .. | 1 | .. | .. |
| 5 | 6 | .. | .. | .. | 6 |
| 6 | 2 | 2 | .. | .. | .. |

Listerellosis.—In recent years, infections of domestic animals with *Listerella monocytogenes* have been demonstrated with ever increasing frequency. Infection in cows, newborn calves, and fetuses have been reported by A. Olson (Skand. Vet.-tidsskr., 35 (5), (1945): 273-280), and by O. G. Wramby (Skand. Vet.-tidsskr., 34 (5), (1944): 277-290); in foals by O. Grini (Norsk Vet.-tidsskr., 54 (8), (1942): 417-428, and 55 (8), (1943): 97-104); in sheep by Olson, Wramby, and Grini; in dogs, foxes, rabbits, and poultry by Wramby. Among the wild animals, it was reported in hares by T. Henriksen (Svensk Vet.-tidsskr., 48 (1), (1943): 1-9), and by Wramby; and in capercaillie by K. Lilleengen (Svensk Vet.-tidsskr., 47 (2), (1942): 56-57; (3), (1942): 100-116; and (4), (1942): 132-145).

The characteristic symptoms will be omitted, because they are well known, but some new observations should be reported. Grini found diarrhea and enteritis in a foal suffering from listerellosis. Olson and Wramby state that abortion in cattle and sheep appeared to be related to the infection, although they were unable to recognize gross lesions in the uterus, after-birth, or fetus, even when pure cultures were cultivated from these tissues. Wramby, however, did observe uterine changes in rabbits, hares, and guinea pigs suffering from listerellosis. Wramby also makes the significant statement that he observed a case of mastitis in a cow, accompanied by very high temperature and secretion of hemorrhagic milk containing pus, which was caused by *L. monocytogenes*.

Organisms have previously been cultivated from blood, meninges, spleen, and necrotic areas in the livers of animals suffering from listerellosis. In 1944, Wramby made isolations from a severe case of mastitis from a fetal calf, from newborn calves, and from placental membranes. In 1945, Olson successfully cultivated the organ-

isms from bovine afterbirths and from the abomasum of a fetal calf.

A study of the biologic properties of *L. monocytogenes* by Wramby, Olson, and Lilleengen showed no production of indole or of hydrogen sulfide; a negative course in the Voges-Proskauer reaction; discoloration without coagulation of litmus milk; fermentation and acidulation of dextrose, mannose, salicin, glucose, amygdaline, and arbutine in twenty-four hours, of maltose in one to two days, and of rhamnose in two to three days. Hydrolysis of dextrin was variable, fermentation of glycerin and saccharose was tardy and incomplete, and there was no fermentation of adonite, arabinose, dulcitol, glycogen, inositol, inulin, mannite, raffinose, sorbit, trehalose, or xylose.

By using agglutination tests, Wramby divided his several strains in two groups; the first contained *Listerella hominis* Yale; *Listerella bovine*, and *Listerella gallinarum*; the second *Listerella hominis* Ruth, *Listerella hominis* Calif., *Listerella hominis* C.P.M.A., and *Listerella gerbelli*. The three strains in the first group are not identical, serologically, while each strain in the second group possesses five antigenic properties which serve to distinguish it. These properties may prove to be as complicated as those of the *Salmonella* group of organisms.

When Wramby tested the resistance of the infective agent in meat, he found that the organisms survived in meat that had been salted for thirteen weeks and also in meat that had been preserved in a 20 per cent sodium chloride brine and held at 4 C. for ten weeks.

Salmonellosis.—During the past five years, the following instances of infection of Danish livestock with salmonellosis have been reported: in the silver fox by O. Bang-Olsen (Maanedsskr. Dyrl., 52 (10), (1940): 241-245); in pigeons, ducks, geese, and turkeys by A. C. Hansen (Maanedsskr. Dyrl., 53 (5), (1941): 129-135); and in 2 healthy swine by H. C. Momberg-Jørgensen (Maanedsskr. Dyrl., 56 (2), (1944): 38-45).

In silver foxes, the disease appeared as a food poisoning during the summer months, and was traced to calf stomachs in two instances. Puppies only were attacked, and death ensued in less than a day, with a mortality as high as 89 per cent in unvaccinated groups or as low as 2 per cent in vaccinated lots. *Salmonella enteritidis*, var. *breslau* and var. *gürtner*, were found in foxes, while var. *breslau* was most common in poultry. The exceptions were 2 fowl carrying var. *dublin* and a group of ducks which yielded var. *essen*.

A significant statement by Momberg-Jørgensen is that, in two instances, he has isolated *Salmonella* from the mesenteric lymph nodes of healthy swine, once getting *Salmonella typhimurium* and once *S. enteritidis* var. *danzon*. He was unable to secure these cultures directly

from the intestinal lymph nodes, but ground the tissue, cultured it in broth containing brilliant green (1:100,000) for twenty hours at 37 C., and then transferred to Conradi-Drigalski agar plates.

Colibacillosis.—Hjärre and O. G. Wramby describe (Skand. Vet.-tidskr., 35 (8), (1945): 449-507) a tumor-like disease of poultry caused by *Escherichia coli*. The characteristic tissue formation is found on the appendix, in the liver, on the peritoneum, in the lungs, and in the bone marrow, but never in the spleen. In appearance, it is very much like tuberculous tissue, but it does not yield *Mycobacterium*. It has been found in birds from all parts of Sweden, where it occurs sporadically, as well as in the turkey and the partridge. The gross lesions appear as necrotic areas surrounded by granulation tissue; and, in advanced cases, these may be cavernous or sequestered, but are never calcified. Histologically, the lesions consist of necrotic tissue surrounded by epithelioid and giant cells.

Not only have the bacteria been isolated from lesions by these workers, but they have been able to transmit the condition to healthy birds by intramuscular injection of ground tissue and by inoculation with cultures isolated from the lesions. Transfer attempts with bacteria-free filtrates from lesions have been unsuccessful.

The bacteria isolated occurred as a mucoid (M) type and a non-mucoid (R) type. The former was the more pathogenic, and the lesions produced by these strains could not be reproduced by the use of ordinary *E. coli* cultures. The pathogenic property appears to be intracellular, and oral administration of the cultures does not result in gross lesions.

Rabbits also proved to be susceptible when intravenously injected with 0.5 to 1.0 cc. four times at intervals of one to four days.

Brucellosis.—After observing that turpentine fumes restricted the growth of *Brucella abortus*, Per Viridén treated, with turpentine, rabbits that had been experimentally infected with brucellosis. He found (Skand. Vet.-tidskr., 35 (3), (1945): 143-148) that three oral doses, administered ten days after infection, brought the titer down from 1:2,000 to 1:200 in forty-two days, whereas the titer persisted at 1:1,000 to 1:2,000 in the control rabbits.

Streptococcosis.—O. Rømer reports (Maanedsskr. Dyrk., 51 (23), (1940): 614-620, and (24), (1940): 633-661), after extensive investigation, that he has never found alpha hemolytic streptococci of Minnett's group 1 as a cause of mastitis in cattle, but he has found beta hemolytic organisms of this group, in fact, several types of them. One type grows in colonies surrounded by a 3-mm. wide hemolytic zone, and it produces total hemolysis of 1 per cent of red blood corpuscles in broth. A second type has a variable hemolytic zone, depending

upon the number of colonies on the plate—wide ring when there are few colonies, narrow ring when the colonies are close together—and partial hemolysis of red corpuscles in broth. A third type shows a narrow ring when only a few colonies are present, none whatever when colonies are close together, and no hemolysis in broth cultures.

A few cases of bovine mastitis were found to be due to Edwards' group 4 streptococci, but most cases were classified under Minnett's group 1 and were rather inconspicuous with an insidious course and with latent periods of variable length. The milk appears normal when secreted in large quantities but, with a decreasing production, alterations in the milk are noted. Mastitis caused by organisms in Minnett's group 2 and 3 is similar to that caused by group 1, except that it is characterized by acute flare-ups, while that due to Edwards' group 4 does not cause changes in the milk. Lancefield's group Ca organisms produce symptoms similar to those produced by bacteria of Minnett's groups 2 and 3, with violent outbreaks and a tendency toward enzootic appearance in the herds. Lancefield's Group Ce streptococci have been named as the cause of mastitis in two cases.

P. Livoni Hansen has studied and compared group C streptococci from cows, swine, and horses. He found (Skand. Vet.-tidskr., 33 (5), (1943): 257-280) that all of them belong in group Ch on the basis of serologic and biochemical tests.

O. Grini studied 11 strains of streptococci from animal group G, and found (Skand. Vet.-tidskr., 35 (10), (1945): 614-621) that most of them split hippurate. Previously such activity had been reported only in group B and group N among the streptococci which develop soluble hemolysins. He also reported frequent instances of cross agglutination with organisms of group C.

Human strains of Lancefield's group G were compared with corresponding animal strains from cats and dogs by S. J. Olsen (Skand. Vet.-tidskr., 35 (11), (1945): 688-718). Typical beta hemolysis was produced by human and animal strains, with a wider zone in the human organisms, although the width of the zone does not permit differentiation between group G, group A, and group C. Olsen was able to distinguish between the human and animal strains on the basis of fibrinolysis, although this was not 100 per cent accurate. Group G streptococci were inhibited *in vitro* by sulfathiazole, sulfanilamide, and lucosil.

Most of the organisms which produce beta hemolysis are ordinary saprophytes on the mucous membranes of normal, adult dogs. They produce pathologic changes when resistance is lowered, as in distemper; and they are important in puppies where they undoubtedly cause many, if not the majority, of deaths.

The animal strains of streptococci of group G are more significant in animal pathology than are the corresponding human strains in human beings.

Leptospirosis.—Cultures of kidneys from 685 dead rats showing no symptoms of leptospirosis (Weill's disease) were examined by H. E. Ottosen (Maanedsskr. Dyrk., 53 (7), (1941): 173-181) who found that 229 (33.4%) were *Lep-tospira*. Serologic tests and guinea pig inoculations of 154 strains showed 149 to be *Lepto-spira icterohemorrhagiae*. In kidney sections, the organism could be found consistently in the convoluted tubules, but never in the interstitial tissue, of infected rats, and no changes were noted which might enable the worker to make a positive diagnosis.

Pseudotuberculosis.—Of 80 cases of pseudo-tuberculosis studied by Karl-Frederick Karlsson (Skand. Vet.-tidskr., 35 (11), (1945): 673-687), ten occurred in turkeys and three in other birds. Young birds were most commonly affected, and during the fall months—with lesions similar to those caused in rodents.

Necrobacillosis.—Subacute and chronic diseases in domestic animals are frequently caused by primary or secondary infections with *Streptothrix cuniculi*, according to E. Mejlbø (Maanedsskr. Dyrk., 52 (12), (1940): 297-311, and (13), (1940): 321-344). It may readily be diagnosed incorrectly, especially in calves, because the primary lesion is not extensive. Even a small lesion can be important, however, because of the tendency toward embolic metastasis or direct spread of the infection. The organisms usually appear as ramified rods with thickened ends.

Studies by G. Hülphers and T. Henricson (Svensk. Vet.-tidskr., 47 (12), (1942): 566-567) refute this last statement from Mejlbø, and also reveal that, contrary to common report, no gas is produced in the cultures of *S. cuniculi*. Whenever gas was observed in the cultures, it was possible to demonstrate the presence of contaminating, gas-producing organisms.

Mejlbø reported that bacteria-free filtrates were toxic to white mice, 1- to 2-day old cultures being most toxic. Greatest toxicity was developed when cultures were grown on Martin broth, but any culture grown on a medium containing brain tissue was more toxic than one grown in the absence of brain. No abscesses nor necrotic areas were produced by injecting bacteria-free filtrates.

Subcutaneous injection of killed cultures did produce necrosis in white mice. Serum from hyperimmunized animals did not protect white mice against subsequent experimental inoculation, but Mejlbø believes that calves and adult cows developed a less serious infection after having been vaccinated.

Tularemia.—Infection of 9 Swedish hares with tularemia was demonstrated by K. Lilleen-

gen (Svensk Vet.-tidskr., 47 (12), (1942): 644-672). The diagnosis was verified by cultivation of *Bacterium tularense* and by inoculation tests on mice, guinea pigs, and rabbits.

Pasteurellosis.—In a series of 819 hares, G. Hülphers and K. Lilleengen found (Svensk Vet.-tidskr., 50 (8), (1945): 227-232) pasteurellosis to be the cause of death in 10. The gross lesions varied greatly, frequently the only changes observed being hyperemia of the mucous membranes of the trachea and larynx. In acute cases, no lesions, or only those of sepsis, were seen. In chronic cases, lesions were found in the lungs and intestines.

Pasteurellosis in enzootic form was reported in the zoo of Stockholm by A. Hjärre and V. Sahlstedt (Svensk Vet.-tidskr., 48 (11), (1943): 325-339). In this outbreak, infection was fatal to 14 hares, 10 owls, 3 capercaillies, 2 beavers, and 1 of each of the following: ptarmigan, eagle, monkey, and bear. Among the wide variety of gross lesions observed, the following were prominent: hyperemia of the mucous membranes of the trachea and larynx, acute sepsis, acute serous and sero-fibrinous pleuritis and peritonitis, and necrotic areas in the liver.

Resistance to Tubercle Bacilli.—This problem was studied by K. Lilleengen and S. Nordfeld (Svensk Vet.-tidskr., 48 (4), (1942): 128-132), by adding AIV solution to blood infected with human tubercle bacilli. Although the pH was brought down to 1.6, the tubercle bacilli survived for more than three months.

BOOKS AND REPORTS

Mosquitoes of Southern United States

At a period when the relation between man and mosquito is severely strained, and the menace remains unconquered, a book on the subject ought to have a place in everyone's library. Last August, a prominent veterinarian was literally driven home from his vacation on account of swarms of mosquitoes having taken possession of his fishing grounds. A technical sergeant home from the South Pacific is spending his time between his bedroom and the veteran's hospital striving to requalify for his job in the steel industry. This six-foot-one, 190-lb. athlete, sole support of his widowed mother and minor children, is a physical wreck. Cause: mosquitoes, man's greatest enemy. So, when the country's most distinguished entomologists, geneticists, paleobotanists, invertebrate zoologists, etc., take time out to compile facts about this insect gathered in the line of duty by observing sanitarians of the Army of the United States, the finished product is something to read and to study.

The mosquito can no longer be dismissed as a mere nuisance in veterinary medicine. It is

the vector of a long list of important animal diseases: bird malaria, filariasis (heart worm), encephalomyelitis, warble fly infection (*Dermatobia hominis*), leishmaniasis, fowlpox, Rift Valley fever, tularemia, not to mention the rodent, primate, and marsupial carriers of yellow fever. The bionomics, life history, medical significance, and methods of control are, therefore, very much the "business" of veterinary medicine. As a matter of fact, the first 47 pages of this book are "must have" information for anyone in our field bent on faithful execution of duty. Yet our treatment of the subject (if we treat of it at all) is in connection with keeping mosquitoes out with screens or off with salves. The idea of extermination, feasible or not, is foreign material to our curriculum. Because we've been scared stiff over yellow fever, our knowledge of them barely extends beyond one species of *Aedes*. The three tribes, eleven genera, and the many species comprising the family of Culicidae classified and described in this book have never aroused as much interest in our wars against disease as their medical and economic importance warrants. Mosquitoes differ so much in their breeding habits, biting habits, and bionomics that specific identifications are necessary prerequisite to their control. This the authors achieve with excellent illustrations and descriptive details. Uniformity in the use of italicized names is complimentary.—[*Mosquitoes of Southern United States*. By Lt. Col. Stanley J. Carpenter, Mayor Woodrow W. Middlekauf, and 1st Lt. Roy W. Chamberlain, Sanitary Corps, A.U.S. Edited by Theodor Just, University of Notre Dame. Cloth. 292 pages. 135 illustrations. The University of Notre Dame. 1946. Price, \$4.00.]

Protozoölogy

At the University of Illinois, the study of Protozoa was renamed *Protozoölogy* for the declared reason of clarifying its confusing taxonomy—a task of considerable dimension in the face of the 15,000 to 20,000 known species of that phylum to be classified and the importance of what they represent in the scheme of life. Protozoa, viewed as links between plant and animal microbes, or in effect, between the vegetable and the animal kingdoms, though disappointing in the attainment of that end, are to be faithfully studied as a basis of general education. In classifying them, confusion arises from the fact that some are free-living, some parasites, some both, and that these unicellular creatures swarm wherever life exists regardless of latitude or medium. They participate in the survival—not destruction—of the higher forms. Relatively few are pathogenic. Trichomoniasis, leptospirosis (Well's disease), piroplasmosis (Texas fever), dourine,

trypanosomiasis (surra), nagana, blackhead, and coccidiosis, about exhaust the specific protozoan diseases of animals. Important as these are, the microorganisms involved constitute but a small fraction of the whole. The first six chapters of this book quite incidentally earmark the fact that protozoölogy is "must ken" for the veterinarian who did not have the advantage of a good course in basic zoölogy, leastwise to the extent of correcting the impression that the pathogenic Protozoa cover the whole subject. The functions, ecology, morphology, physiology, and reproductive processes of these one-cell organisms which are so well presented are segments of fundamental learning. The protozoan is a stem of many branchings. Chapters from 7 through 43 carry out the author's purpose—the revision of protozoan taxonomy with graphic illustrations disclosing at a glance the amazing characteristics of these ubiquitous microbes.

It is fascinating to be reminded that the first microbes to be brought within the range of microscopy were Leeuwenhoek's Infusoria in 1674 and also that Pasteur's *Nosema bombycis*, the microsporidian of silkworm disease, opened the door for the study of specific infections, both vegetable (bacteria) and animal (Protozoa).

The writing of the word Protozoa recalls the loose grammar commonly used in the language of medicine, for convenience, namely, protozoa and Protozoa (*n.pl.*) either with a small or a big "P" without batting an eye; protozoan and protozoans (*n.s. and pl.*) whichever happens to please; and protozoan (*adj.*) if the heart desires, all of these, besides protozoal and protozoic, being beautifully consecrated by usage. It seems that Science is critical about everything exception the Science of Language. The tip-off is that the puzzled writer no longer needs to lose sleep over the coinage of common nouns and adjectives from words entitled to majestic capitals, i.e., zoölogical terms *et al.* above the grade of species. But, neither fulsome praise nor acrid criticism ever stole the popularity of a good book, least of all one as informative, as well written, and as well organized as Kudo's third edition. [*Protozoölogy*. By Richard R. Kudo, D.Sc., Professor of Zoology, University of Illinois. Cloth. 778 pages. 336 illustrations. Charles C. Thomas, Springfield, Illinois. Price, \$8.00.]

Regardless of the age at which the dosing was started, stilbestrol fed to cockerels at the rate of 1 mg. per day brought definite improvement in their market grade in trials conducted by Styles, Davidson, and Barrett, at Michigan State College. This dose was the minimal amount that gave visible results.

THE NEWS

Second Report on the Research Fund Campaign—Colorado First to Meet State Quota

Veterinarians of Colorado are the first to go over the top in meeting their quota of the \$100,000 AVMA Research Fund as shown in the second report of the Special Committee on Financing Research on the opposite page. This is a fitting accomplishment for the home state of President James Farquharson and reflects the splendid work done by him and his committee at the recent meeting of the Colorado Veterinary Medical Association in Ft. Collins. Even though the Colorado contributions as of June 10 are already 10 per cent over the state quota, the committee members say they are not going to cease their efforts, since a number of veterinarians in the state have not yet been contacted. Moreover, the \$1,950 credited to the state does not include a contribution of \$50 from the Student AVMA Chapter at Colorado A. and M. College.

The figures given in the table represent individual contributions only and show that 1,502 persons have given a total of \$30,193.06, an average of about \$20.00 each, the same as in the previous report. This represents an increase of 650 contributors and nearly \$13,000 dollars in two months.

Two direct mailings have been sent by the Special Committee on Financing Research to some 10,000 veterinarians. The first mailing was made in February, 1946, and the second during the first week in May. The Committee now has appointed state chairmen to carry on organized appeals at veterinary association meetings, both state and local, and to set up fund committees in the respective states to make personal appeals to individual members of the profession.

The five leaders reported in May in respect to per cent of quotas attained were, in order, New Mexico, Oklahoma, California, Kansas, and Colorado. In the present report, they are: Colorado, 110 per cent; Rhode Island, 90 per cent; New Mexico, 56.9 per cent; Oklahoma,

53.6 per cent, and California, 47.8 per cent.

The ear-marking of contributions shows the following distribution:

| | |
|--|----------|
| Unrestricted (to be used at the discretion of the Research Council) .. | \$18,201 |
| For research on small animals | 5,170 |
| For research on large animals | 5,402 |
| For research in the basic sciences | 1,031 |
| For research on poultry | 297 |
| For research on fur-bearing animals .. | 90 |

Total\$30,193

Executive Board Nominations in Districts VI and VIII

The polls for nomination of candidates for elections in Executive Board Districts VI and VIII closed on June 1, 1946. Drs. W. J. Young and E. R. Maschgan of Chicago served as tellers on June 5 to count the ballots and certified the following nominees:

District VI (Arizona, California, Canal Zone and Central America, Colorado, Mexico, Nevada, New Mexico, and Utah):

Joseph M. Arburua, San Francisco, Calif.

G. W. Closson, San Gabriel, Calif.

George H. Hart, Davis, Calif.

W. H. Hendricks, Salt Lake City, Utah.

L. M. Hurt, Sierra Madre, Calif.

N. J. Miller, Eaton, Colo.

H. M. O'Rear, Sacramento, Calif.

It was necessary to list seven candidates in this district instead of the usual five because of a three-way tie for fifth place.

District VIII (Arkansas, Kansas, Louisiana, Missouri, Oklahoma, and Texas):

W. G. Brock, Dallas, Texas.

E. R. Frank, Manhattan, Kan.

E. J. Frick, Manhattan, Kan.

S. W. Halgler, St. Louis, Mo.

Hubert Shull, Texarkana, Texas.

Under date of June 12, ballots were mailed to all members in the two districts. The election polls will close on August 12, 1946.

If You Did NOT Receive Your June JOURNAL — Please Read This!

Due to some circumstance, so far unexplained, a number of envelopes addressed for the June issue disappeared after they left our circulation department. Unfortunately, there is no way to determine which envelopes were lost. If members who have not received their June JOURNALS will drop us a card, copies will be mailed at once.—AVMA Circulation Department, 600 S. Michigan Ave., Chicago 5, Ill.

Second Report on Contributions to AVMA Research Fund
Geographical Breakdown as of June 10, 1946

| State | Total Number Veterinarians (1945 figures) | Quota* | Number of Contributions (to date) | Total Amount Contributed (to date) | Per cent of quota (to date) |
|----------------------|---|------------|---|--|-----------------------------------|
| Alabama | 125 | \$ 1,250 | 5 | \$ 75.00 | 6.0 |
| Arizona | 42 | 420 | 2 | 20.00 | 4.7 |
| Arkansas | 59 | 590 | 3 | 25.00 | 4.2 |
| California | 1,044 | 10,440 | 249 | 4,990.00 | 47.8 |
| Colorado | 177 | 1,770 | 81 | 1,950.00 | 110.0 |
| Connecticut | 136 | 1,360 | 20 | 425.00 | 31.2 |
| Delaware | 32 | 320 | .. | | |
| Dist. of Col..... | 58 | 580 | 2 | 125.00 | 21.5 |
| Florida | 142 | 1,420 | 17 | 550.00 | 30.8 |
| Georgia | 147 | 1,470 | 17 | 260.00 | 17.7 |
| Idaho | 71 | 710 | 10 | 110.00 | 15.4 |
| Illinois | 1,224 | 12,240 | 109 | 2,785.00 | 22.8 |
| Indiana | 585 | 5,850 | 27 | 455.00 | 7.7 |
| Iowa | 865 | 8,650 | 87 | 1,572.31 | 18.2 |
| Kansas | 404 | 4,040 | 46 | 1,215.00 | 30.0 |
| Kentucky | 137 | 1,370 | 6 | 80.00 | 5.7 |
| Louisiana | 85 | 850 | 9 | 195.00 | 23.9 |
| Maine | 68 | 680 | 13 | 185.00 | 27.2 |
| Maryland | 165 | 1,650 | 9 | 145.00 | 8.7 |
| Massachusetts | 206 | 2,060 | 32 | 505.00 | 24.5 |
| Michigan | 550 | 5,500 | 47 | 930.00 | 16.9 |
| Minnesota | 403 | 4,030 | 45 | 715.00 | 17.7 |
| Mississippi | 99 | 990 | 4 | 95.00 | 9.6 |
| Missouri | 356 | 3,560 | 27 | 495.00 | 14.0 |
| Montana | 63 | 630 | 8 | 90.00 | 14.3 |
| Nebraska | 281 | 2,810 | 44 | 758.75 | 27.0 |
| Nevada | 27 | 270 | 3 | 75.00 | 27.7 |
| New Hampshire | 35 | 350 | 4 | 55.00 | 15.7 |
| New Jersey | 301 | 3,010 | 36 | 740.00 | 24.6 |
| New Mexico..... | 29 | 290 | 11 | 165.00 | 56.9 |
| New York | 980 | 9,800 | 90 | 2,100.00 | 21.4 |
| North Carolina | 135 | 1,350 | 15 | 240.00 | 17.8 |
| North Dakota | 73 | 730 | 6 | 165.00 | 22.6 |
| Ohio | 740 | 7,400 | 111 | 2,065.00 | 27.9 |
| Oklahoma | 110 | 1,100 | 40 | 590.00 | 53.6 |
| Oregon | 175 | 1,750 | 20 | 445.00 | 25.4 |
| Pennsylvania | 656 | 6,560 | 45 | 1,297.00 | 19.7 |
| Rhode Island | 25 | 250 | 3 | 225.00 | 90.0 |
| South Carolina | 80 | 800 | 5 | 90.00 | 11.2 |
| South Dakota | 118 | 1,180 | 10 | 170.00 | 14.4 |
| Tennessee | 93 | 930 | 12 | 140.00 | 15.0 |
| Texas | 421 | 4,210 | 32 | 518.00 | 12.3 |
| Utah | 45 | 450 | 12 | 120.00 | 27.0 |
| Vermont | 96 | 960 | 6 | 42.00 | 4.4 |
| Virginia | 130 | 1,300 | 18 | 345.00 | 26.5 |
| Washington | 226 | 2,260 | 31 | 630.00 | 27.9 |
| West Virginia | 65 | 650 | 5 | 65.00 | 10.0 |
| Wisconsin | 502 | 5,020 | 53 | 765.00 | 15.2 |
| Wyoming | 38 | 380 | 4 | 95.00 | 25.3 |
| Hawaii | | | 11 | 300.00 | |
| Totals | 12,624 | \$126,240* | 1,502 | \$30,193.06 | |

*Based on an average contribution of \$10.00 per veterinarian. The total amount contributed to date is 30.1 per cent of the original goal of \$100,000.

Proposed Amendments to Constitution and Administrative By-Laws

PROPOSAL No. 1

[The purpose of this proposal is to permit the outgoing president to serve as an *ex officio* member of the Executive Board for one additional year, replacing the present member-at-large, and thus retaining the present number of Board members (13). If this purpose is to be effected, the following several changes in the By-Laws must be made.]

Amend Section 3 of Article II of the By-Laws by adding the following paragraph:

"(f) At the conclusion of his term of office, the president shall serve for one year as a member *ex officio* of the Executive Board."

Amend Section 1 of Article VIII of the By-Laws by striking out the words "a member-at-large" and substituting therefor the words "the immediate past president."

Amend paragraph (a) of Section 2 of Article VIII of the By-Laws by striking out the words "and the member-at-large" from the first sentence, and by deleting the entire second sentence of this paragraph.

Amend paragraph (c) of Section 2 of Article VIII by adding the following sentence: "The immediate past president shall serve as a member of the Executive Board for one year only."

Amend paragraph (a) of Section 3 of Article VIII by striking out the words "except in the case of the member-at-large, which shall be filled by election at the next general assembly," and by changing the comma after the word "time" to a period.

PROPOSAL No. 2

[The purpose of this proposal is to permit the incorporation of Mexico, the West Indies, and the Panama Canal Zone into Zone 3 of the official apportionment map of areas for AVMA conventions.]

Amend paragraph (b) of Section 1 of Article XI of the By-Laws so that the first sentence will read "Place: The United States, the Dominion of Canada, the Republic of Mexico, the West Indies, and the Panama Canal Zone shall be divided into four convention zones for the holding of annual sessions in such numerical order as to favor alike all sections within the contiguous territory of these countries."

PROPOSAL No. 3

[The purpose of this proposal is to integrate membership in constituent associations (state, provincial, territorial, and other veterinary associations affiliated with the AVMA) with AVMA membership. If this purpose is to be effected, the following several changes in the Constitution and Administrative By-Laws are necessary.]

1) Amend Article III, Section (b) of the Constitution to read:

"General Membership.—The general membership, otherwise known as the active membership, shall consist of (1) graduates of veterinary colleges approved by the Association who are members of their respective constituent

associations and who have been duly elected in the manner hereinafter provided, and (2) associate members who have been duly elected as provided in paragraph (c) of this article.

"c. Associate Membership.—The associate membership shall consist of veterinarians duly elected in the manner provided by the by-laws who live in countries outside of the United States and the Dominion of Canada, and who are otherwise eligible but do not or could not hold membership in a constituent association."

Present paragraph c) would become d), and present paragraph d) would become e).

2) Amend Article IV, Section 1 of the Constitution to read:

"State, territorial, and provincial veterinary associations of North America, The National Association of Federal Veterinarians and the official association of veterinarians of the United States Army which have or may hereafter become organized in conformity with the general plan of the American Veterinary Medical Association, and which have adopted the same qualifications for membership, shall be recognized upon application as constituent associations provided such application is approved by a majority vote of the Executive Board."

3) Amend Article X, Section 2 a) of the By-Laws as follows:

Drop the last sentence and replace with: "The application shall contain the certificate of the secretary of the constituent association that the applicant is a member in good standing of that body."

"The American Veterinary Medical Association reserves the right to reject the application of any member of any constituent association."

4) Add a new paragraph (b) to Section 3, Article X as follows:

"Members who have been dropped from constituent associations shall be dropped from the American Veterinary Medical Association on official notification by the secretary of the constituent association and shall be reinstated in the same manner. Whenever a member of this Association is dropped for any reason, the secretary of the constituent association in which he holds membership shall be notified promptly."

5) Replace Section 4 of Article X with the following:

Section 4. The applications of candidates for associate membership shall be submitted to the Executive Board and shall be accepted or rejected by that body at any regular or special meeting. Associate members shall have all of the rights and privileges and be subjected to the same obligations as other active members except only that they are not required to maintain membership in a constituent association.

Present Section 4 would then become Section 5, and present Section 5 would become Section 6.

6) Amend present Section 5 by making subparagraph (a) a part of proposed new Section 4, and changing last part of this paragraph to read:

"provided they have applied for membership in a constituent association within three months after graduation."

APPLICATIONS

The listing of applicants conforms to the requirements of the administrative by-laws—Article X, Section 2.

First Listing

ABBUTHNOTT, JOHN

Portage LaPrairie, Man., Can.
B.V.Sc., Ontario Veterinary College, 1938.
Vouchers: F. F. Saint and H. H. Ross.

ABOSEMENA, A. A.

Box No. 192, Panama City, Republic of Panama.
D.V.M., Iowa State College, 1933.
Vouchers: A. L. Opp and C. C. Clay.

BURNETTE, PETER F.

East Point, Ga.
D.V.M., Alabama Polytechnic Institute, 1940.
Vouchers: A. L. Opp and C. C. Clay.

CANTY, JOHN

St. Johnsbury, Vt.
B.V.Sc., Ontario Veterinary College, 1911.
Vouchers: L. R. Haubrich and A. F. Ranney.

COLPRON, GERARD

St. Constant, Co. LaPrairie, Province Quebec, Can.
M.D.V., Montreal University, 1942.
Vouchers: J. S. Jasmin and W. G. Stevenson.

CURTIS, CHARLES A.

307 Cornell, Albuquerque, N. Mex.
D.V.S., Kansas City Veterinary College, 1908.
Vouchers: L. E. Patton and S. W. Wiest.

DEDERICK, FREDERIC V.

39 Blake St., Keene, N. H.
D.V.M., Cornell University, 1917.
Vouchers: R. W. Smith and F. F. Russell.

DUTTON, CLYDE E.

475 Main St., Saco, Maine.
D.V.M., Michigan State College, 1923.
Vouchers: L. B. Denton and S. W. Stiles.

FREEMAN, ARLAN E.

Rumford, Maine.
D.V.M., Ontario Veterinary College, 1935.
Vouchers: L. B. Denton and E. E. Russell.

GATES, GLENN D.

P. O. Box 417, Clarksdale, Miss.
V.M.D., University of Pennsylvania, 1941.
Vouchers: W. L. Gates and J. G. Hardenbergh.

GLAISYER, ARTHUR R. JR.

Kalaheo, Kauai, Territory of Hawaii.
D.V.M., Texas A. & M. College, 1946.
Vouchers: J. M. Hendershot and E. H. Willers.

HENDRICKSON, THAYER D.

200 N. Walnut St., Little Rock, Ark.
D.V.M., Texas A. & M. College, 1946.
Vouchers: C. T. Mason and A. W. Rice.

HINKLE, ROSS J.

2159 N. Farwell, Milwaukee, Wis.
D.V.M., Ohio State University, 1919.
Vouchers: F. L. Gentile and K. G. Nicholson.

MCDONALD, H. F.

1231 Gray Ave., Utica, N. Y.
D.V.M., Cornell University, 1932.
Vouchers: C. E. DeCamp and E. V. Moore.

OSBORN, EARL B.

115 W. McDowell Rd., Phoenix, Ariz.
D.V.M., McMillip Veterinary College, 1913.
Vouchers: J. Farquharson and D. Miller.

POKRANDT, OTTO A.

Markesan, Wis.
B.V.Sc., Ontario Veterinary College, 1910.
Vouchers: R. C. Klussendorf and E. C. Jespersen.

RUBIO L., FRANCISCO

Juan Escutia 101 A Colonia Condesa, Mexico, D. F.
M.V., Escuela Nacional de Medicina Veterinaria, Mexico, 1924.
Vouchers: F. Camargo N. and A. Tellez G.

SHARP, FRED H.

207 S. Vassar Ave., Albuquerque, N. Mex.
D.V.M., Kansas City Veterinary College, 1912.
Vouchers: L. E. Patton and S. W. Wiest.

TINGLEY, H. J.

399 Sherbrook St., Winnipeg, Man., Can.
B.V.Sc., Ontario Veterinary College, 1923.
Vouchers: A. Savage and J. M. Isa.

WILLSON, ROBERT F.

11365 Manor, Detroit 4, Mich.
D.V.M., Michigan State College, 1936.
Vouchers: K. Ross and B. J. Killham.

Second Listing

Bach, Clarence C., Sebawaing, Mich.

Davis, O. G., Roxboro, N. Car.

Greenberg, Mark L., 115 Pendleton St., New Haven 11, Conn.

Guthrie, Richard S., Camp Forrest, Tullahoma, Tenn.

Jaksekovic, Stjepan, Hotel Karsten, Kewau-
nee, Wis.

Weaver, George L. H., Dept. of Animal Path-
ology, Michigan State College, East Lansing,
Mich.

Yager, Henry, Somerset, Orange Co., Virginia.

1946 Graduate Applicants

First Listing

The following are graduates who have recently received their veterinary degrees and who have applied for AVMA membership under the provision granted in the Administrative By-Laws to members in good standing of junior chapters. Applications from this year's senior classes not received in time for listing this month will appear in later issues. An

asterisk (*) after the name of a school indicates that all of this year's graduates have made application for membership.

Iowa State College

PRICE, HARVEY, D.V.M.

Ada, Okla.

Vouchers: M. A. Emmerson and G. R. Fowler.

Ontario Veterinary College

HARTWICK, KARL A. J., D.V.M.

Fisherville, Ont., Can.

Vouchers: A. L. MacNabb and R. A. McIntosh.

MORGAN, FLORENCE J., D.V.M.

Ontario Veterinary College, Guelph, Ont., Can.

Vouchers: A. L. MacNabb and R. A. McIntosh.

Texas A. & M. College

CLARK, CLARENCE A., D.V.M.

Hallettsville, Texas.

Vouchers: R. D. Turk and R. P. Marsteller.

DAILY, HAROLD I., D.V.M.

Simonton, Texas.

Vouchers: G. T. Edds and A. A. Lenert.

GROGAN, EARL W., D.V.M.

Rt. 2, Deport, Texas.

Vouchers: F. P. Jaggi and W. W. Armistead.

HIGHTOWER, DAN, D.V.M.

Box 166, Eastland, Texas.

Vouchers: R. C. Dunn and F. P. Jaggi.

KING, ELMO D., D.V.M.

Rt. No. 3, Box 68, Gatesville, Texas.

Vouchers: R. C. Dunn and V. B. Robinson.

KOKERNOT, ROBERT H., D.V.M.

Box 570, Alpine, Texas.

Vouchers: R. C. Dunn and A. A. Lenert.

McDERMOTT, LYLE A., D.V.M.

Rt. No. 3, Cameron, Texas.

Vouchers: R. C. Dunn and A. A. Lenert.

MARTIN, JESSE R., D.V.M.

Box 632, Coleman, Texas.

Vouchers: R. C. Dunn and E. A. Grist.

MOORE, HOMER J., D.V.M.

Box 786, Alvin, Texas.

Vouchers: R. P. Marsteller and D. R. Knight.

TIERCE, MILLARD L. JR., D.V.M.

Box 64, Millsap, Texas.

Vouchers: R. C. Dunn and A. A. Lenert.

WARD, RALPH D., D.V.M.

2515 Ralph St., Houston, Texas.

Vouchers: J. H. Milliff and W. W. Armistead.

Second Listing

Texas A. & M. College

Bilderback, William R., D.V.M., 515 St. Louis Ave., Fort Worth 4, Texas.

Boaz, Wilson O., D.V.M., 1712 W. 3rd, Pecos, Texas.

Strickhausen, George III, D.V.M., Dandera, Texas.

State College of Washington

Moon, Charles E., D.V.M., P. O. Box 426, Renton, Wash.

U. S. GOVERNMENT

Identity of Slaughter Cattle.—Dr. A. R. Miller, Chief, Meat Inspection Division, Production and Marketing Administration, USDA, has directed a letter to all inspectors in charge of meat inspection and all owners and operators of official establishments, requesting coöperation in locating sources of communicable diseases.

Livestock shipped directly from the farm or range to market can usually be traced back to the point of origin. However, when animals pass through sales barns, stockyards, etc., change hands several times, and lose eartags, sales tags, or other identification in the process; then it becomes a difficult matter to trace them back to origin. Whenever communicable diseases are encountered in the course of meat inspection activities, it is highly desirable that information be accumulated to show where the disease was first encountered and what sort of a trail of exposure has been created. Coöperation among all persons and officials engaged in buying and selling livestock is necessary in order that this problem may be solved quickly and readily.

Dr. Miller has also called attention to the similarity between the lesions of tuberculosis and those of coccidioid granuloma, a condition which is fairly common in cattle in the West and Southwest. In order to differentiate these conditions, a careful laboratory examination is advisable. In man, *Histoplasma capsulatum* causes lung lesions which simulate tuberculosis. Although no cases of this nature have been encountered in meat-producing animals, a positive case of histoplasmosis has been diagnosed in a dog, and it is a condition which must be considered in making a diagnosis of tuberculosis from gross lesions.

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Conference on Newcastle Disease.—Representatives of the poultry industry conferred with officials of the U. S. Department of Agriculture when they were invited to Washington, D. C., on May 2 and 3, 1946. The subject discussed was Newcastle disease, also known as pneumoencephalitis.

Plans for unified action to control losses from the disease were drafted, and the representatives assembled urged that more research work be done by federal and state investigators.

Resuscitation From Shock.—Rapid and intensive rewarming of the body, by means of hot water baths, is superior to other methods of resuscitation from shock which results from prolonged exposure to cold, according to a report by a U. S. investigator, who studied the results of large-scale German experiments performed on prisoners in the Dachau concentration camp. Report 250 from the Office of the Publication Board, Department of Commerce, is a document of 228 pages describing the work, and it may be purchased for \$2.50 by addressing the Board at Washington 25, D. C.

CARE Food Packages.—Coöperative for American Remittances to Europe, Inc. (CARE), 50 Broad Street, New York 4, N. Y., has food packages containing 29 lb. net and averaging 40,400 calories. They contain balanced menus including meats and vegetables, sugar and cocoa, puddings and cereals, jam, butter, and milk. These packages sell for \$15.00 each; are available for immediate distribution in Austria, Czechoslovakia, Finland, France, Italy, The Netherlands, Norway, and Poland; and may be purchased for a definite beneficiary, for any of the countries listed, or without specifying an individual, group, or church as beneficiary. A receipt will be signed by the recipient and returned to the purchaser.

AMONG THE STATES

Alabama

Dr. Gordon Kendall Builds New Hospital.—A copy of *The Bull Lion*, the Lions Club weekly from Montgomery, Ala., recently carried the following item: "Lion Gordon Kendall (A.P.I. '28) will soon have his new \$35,000 Veterinary Hospital, at 643 South Decatur St., completed. It will be one of the most modern institutions of its kind in the South. He states that he will be able to treat any kind of an animal from a mouse to a *Lion*, and that he has a special ward set aside for *Tail Twisters*."

California

Annual Meeting.—The California State Veterinary Medical Association held its annual meeting at Santa Barbara from June 17 to 19. After an address of welcome by Mayor Herbert E. Weyler, and a response by the president, Dr. E. C. Baxter, the following professional program was presented:

Dr. J. E. Peters, East Pasadena: "Incidence and Treatment of Lameness in the Race Horse."

Dr. R. F. Bourne, Colorado State College, Fort Collins: "Discussion of Some of the Newer Drugs" and "Little Discussed Phases of Physiology."

Dr. T. J. Hage, Whittier: "Rabbit Diseases from the Practitioner's Viewpoint."

Dr. H. E. Kingman, Sr., Wyoming Hereford Ranch, Cheyenne: "The Semen Picture as an Index to the Pathology of the Genital Tract of the Bull" and "The Placenta of the Cow."

Dr. J. V. Lacroix, Evanston, Ill.: "Canine Surgery" and "Progress in Canine Medicine."

Dr. W. F. Guard, The Ohio State University, Columbus: "Surgery of the Teat and Udder" and "Some Problems in Surgery."

s/F. P. WILCOX, Secretary.

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Instruments Stolen.—Dr. Charles H. Reid, of Hollywood, reports that he had the misfortune of having the bag containing his instruments stolen recently, and he asks that if any veterinarian is offered the opportunity to buy such instruments, he should be on guard to avoid purchasing stolen goods. Any help in recovering the stolen instruments will be appreciated.

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Dairy Inspectors Needed.—An examination for dairy inspectors will be held by the California State Personnel Board on Aug. 8, 1946. The final date for filing applications is July 18. The salary range is from \$240 to \$280, and full particulars may be obtained from the State Personnel Board, 1015 L. St., Sacramento.

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Goats for Guam.—The appeal of the U. S. Navy to the College of Agriculture, at Davis, for goats to stock its agricultural projects in the island of Guam took tangible form when the selection of the goats was turned over to the Los Angeles County Live Stock Department. Dr. E. M. Hobbs, deputy inspector, and Lt. Donald MacKensie, U.S.N., in company with Presi-



—Goat World Photo

Three of the 18 "Goats for Guam."

dent Frank Ecker of the San Fernando Valley Goat Society, made selections which met the critical specifications of the Navy. Six Saanen's and 18 Nubian's, 3 bucks for each group, were chosen after being tested for tuberculosis and brucellosis, tattooed, and photographed by the press. The consignment was turned over to sailors of the USS Muliphen and sent on its way to build up the goat herd of the Guam Agricultural Experiment Station which the Navy directs.—*From The Goat World.*

Poultry Feed Shortage.—Dr. George H. Hart, of Davis, is quoted (*San Francisco Chronicle*, April 4) as saying that California's poultry industry will have to be cut 40 per cent unless more feed is made available promptly. The government was urged to divert surplus feed from Mexico, wheat from the Northwest, and copra from the Pacific to relieve the critical situation.—*From The California Wool Grower.*

AMA Session.—After a lapse of four years, the American Medical Association will meet in San Francisco July 1 to 5 for a full session and complements of distractions comprising scientific and technical exhibits, entertainment, banquet, hops, golf tournament, and other feature events. One of the greatest meetings in the history of medicine is predictable from the programs announced and the preparations made for the conventionists. The complete program, published in the May 25 issue of the *Journal of the American Medical Association*, shows an unprecedented agenda.

Personal.—Dr. R. M. Barschak (M.S.C. '41) and Dr. E. G. Balle (M.S.C. '39) announce the opening of the West Pico Hospital for Animals at 5258 West Pico Blvd., Los Angeles, Calif.

Illinois

Chicago's Golden Anniversary.—The Chicago Veterinary Medical Association met on May 14, 1946, to hear Dr. W. S. Gochenour, of the Pitman-Moore Co., Indianapolis, Ind., discuss "Canine Distemper" and "Advances in Rabies Vaccine." Sound movies of ultraviolet purification of air were also shown by the Westinghouse Sterilamp Division.

The June meeting will take the form of a banquet and Golden Anniversary celebration to commemorate the founding of the association in 1896.

S/R. C. GLOVER, Secretary.

A True War-Dog Story.—It happened in Chicago. *Dramatis personae:* (1) Snoople, 60-lb. reconverted Malemute of the K-9 Corps, U. S. Army, with a record for distinguished service in the South Pacific theater, now watchman for a dog shelter, (2) Miss Viola Larsen, in charge of the shelter, and (3) infuriated caller. When the man became obstreperous at not find-

ing his lost Spitz at the shelter, Snoople was told to do his stuff. He took the i.c. firmly by the arm and led him to the street. 'Nuff sed, except that the episode was reported to the police as a matter of security against legal action.

Elected Mayor.—Dr. H. E. Bearss (C.V.C. '09), of Minonk, has demonstrated that he holds the confidence and the respect of his community. He was recently elected mayor of that city.

Personal.—Dr. K. V. Shashek (O.S.U. '46) has accepted a position in the diagnostic laboratories of the Corn Belt Laboratories, at East St. Louis.

Personal.—Dr. George J. MacLean (Colo. '33), who practiced at MacLean before the beginning of his fifty-five months in the Veterinary Corps, is now associated with Allied Laboratories and is located at Galesburg.

Indiana

Michiana Clinic.—Nappanee was the scene of a clinic sponsored by the Michiana Veterinary Medical Association on May 22, 1946. The program consisted of practical demonstrations of five to fifteen minutes' duration by members of the association. [For breadth of scope, it offers a challenge to any veterinary group, and it speaks highly of the versatility and wide interest of its members. As indicated elsewhere (Surgery & Obstetrics), it differed from clinics of previous years by the complete absence of equine cases and by the variety of small animal problems presented for a group composed largely of general practitioners. For a lively meeting, and for expert staging of the several events, the members of the program committee are to be commended.—*Ed.*]

Dr. W. A. Mackenzie, of Nappanee, handled the local arrangements.

Brucellosis Control.—Since the beginning of the brucellosis control program in 1934 with the enlistment of 254 herds containing 6,915 head of cattle, it has grown considerably, especially during 1943 and 1944. The 1945 figures show 44,624 herds enrolled, with a total of 479,888 head of cattle. Meantime, the infection has been reduced from 23.0 per cent of cattle tested in 1934, to 13.86 per cent in 1935, and since then a fluctuation between 4.0 and 8.0 per cent, with 1941 and 1942 marking the lowest rates of infection.

Pitman-Moore Vice President.—Mr. Kenneth F. Valentine has been promoted from the position of assistant to the president to that of executive vice-president of the Pitman-Moore Division of Allied Laboratories, Indianapolis. He had been assistant sales manager before the war, and returned from military service a year ago after serving as a major in the Air Corps.

Iowa

North Central Association.—The first spring meeting since 1942 of the North Central Iowa Veterinary Medical Association was held at Fort Dodge on April 25, 1946. The program consisted of papers presented by:

Dr. Frank Suits, Odessa, Mo.: "Some Phases of Cattle Practice."

Dr. A. H. Quin, Kansas City, Mo.: Discussion of above named paper.

Dr. L. M. Hutchings, Purdue University, Lafayette, Ind.: "Swine Brucellosis."

Dr. S. H. McNutt, Veterinary Research Institute, Ames: Discussion.

Dr. C. D. Lee, Veterinary Research Institute, Ames: "Current Poultry and Turkey Problems."

Dr. C. C. Franks, Iowa State Veterinarian, Des Moines.

Dr. J. A. Barger, U. S. BAI, Des Moines.

s/H. C. SMITH, *Secretary*.

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Practitioners in Public Office.—Six Iowa practitioners were elected to office at the March election: Dr. James McKenzie, of Baxter, to the office of mayor; Dr. F. E. Brutsman, of Traer, reelected as mayor; Dr. W. C. Vollstedt, of Dixon, to the office of mayor; Dr. D. B. Radloff, of Conrad, Dr. Earl C. Ritter, of Sumner, and Dr. H. O. Heddons, of Wellsburg, to the office of town councilman.

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Southeastern Association.—On May 7, 1946, the Southeastern Iowa Veterinary Medical Association met at Mt. Pleasant, with 22 veterinarians present from nine counties.

Dr. H. G. Dow, of Fort Madison, gave an account of a double hanging at the state penitentiary. Dr. John W. Carey, of West Liberty, recounted some of his experiences while serving in the Veterinary Corps in Australia, New Guinea, India, China, and the Philippines. Not only did he discuss the diseases of horses and mules of the military forces, but also told some stories about wild animals and some hunting and fishing expeditions.

Officers elected for the coming year are: Dr. C. W. Wiley, Farson, *president*; Dr. Donald F. Mossman, Mt. Pleasant, *vice-president*; and Dr. C. C. Steele, Fairfield, *secretary-treasurer*.

s/C. C. STEELE, *Secretary*.

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Cedar Valley Veterinarians Meet.—Fifty veterinarians from 17 counties met at Waterloo on May 13, 1946, for a dinner session of the Cedar Valley Veterinary Association.

Dr. C. E. Juhl, of Osage, conducted a round-table discussion of diseases of cattle and hogs, and the following participated: Dr. R. E. Elson, Vinton; Dr. R. C. Ripple, New Hampton; Dr. J. W. Carey, West Liberty; Dr. J. W. Giffie, Cedar Rapids; Dr. R. M. Hoffer, Cedar Rapids; Dr. I. H. Hayes, Cedar Falls; Dr. G. C. Brown,

Hudson; Dr. G. N. Richards, Osage; and Dr. K. H. Schalk, Iowa Falls.

Case reports were given by Dr. M. L. Spear, Hampton; Dr. H. S. Lames, Dysart; Dr. Iva Dunn, Atkins; Dr. H. L. McCrillis, New Hampton; Dr. C. C. Graham, Wellsburg; Dr. G. T. Smith, Reinbeck; Dr. J. W. Sexton, Sumner; and Dr. L. L. Boxwell, Cedar Falls.

s/C. B. STRAIN, *Secretary*.

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Faster-Growing Hogs.—The USDA Regional Swine Breeding Laboratory at Ames, under the direction of Dr. W. A. Craft, in cooperation with a number of state agricultural experiment stations, is conducting an extensive series of carefully planned experiments on the breeding of faster-growing hogs of superior conformation and higher rate of livability. Five breeds and three lines of crossbreeds are being used in the research.

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Lions Club Speaker.—Dr. R. J. Lenz, of Marion, told his local Lions Club about the work and the responsibility of the veterinarian when he spoke to them on March 20, 1946.

Kansas

Power Sprayers.—Surplus power spraying machines suitable for spraying cattle for flies, cattle grubs, and lice, as well as for spraying trees and bindweed and for fighting fires, are being acquired by the Kansas State College Extension Service. Of the 57 units allocated, nine have already been delivered. Material assistance was rendered by Mr. Will J. Miller, state sanitary livestock commissioner, and by Mr. R. L. Cuff, of the National Livestock Loss Prevention Board.—*K.S.C. Extension News*.

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Delegates to House of Representatives.—An audit of ballots by the Board of Directors shows the following to have been elected to the House of Representatives of the Kansas Veterinary Medical Association:

- District I. Dr. E. C. Johnson, Makato, 1947.
Dr. M. P. Schlaegel, Beloit, 1948.
- District II. Dr. R. M. Platt, Protection, 1947
Dr. P. D. Cazier, Dodge City, 1948
- District III. Dr. E. F. Kubin, McPherson, 1947
Dr. John Pugh, Salina, 1948
- District IV. Dr. J. A. Bogue, Wichita, 1947
Dr. L. E. Dietrich, Wichita, 1948
- District V. Dr. G. R. Moore, Manhattan, 1947
Dr. F. H. Oberst, Manhattan, 1948
- District VI. Dr. S. J. Dowds, Oskaloosa, 1947
Dr. P. L. Talbot, Leavenworth, 1948
- District VII. Dr. R. F. Coffey, Topeka, 1947
Dr. W. E. Logan, Topeka, 1948
- District VIII. Dr. K. R. Dudley, Iola, 1947
Dr. L. H. Smith, Chanute, 1948.

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District IV.—The bimonthly meeting of the members of District IV was held at Wichita on

April 13, 1946, with Dr. J. A. Bogue presiding over an attendance of 45.

Mr. W. B. Harrison, president of the Union National Bank of Wichita, talked of the future prospects of Kansas in an interesting and instructive manner. Dr. Geo. A. Rathman, of the Livestock Sanitary Commission, Topeka, led a discussion on "Tuberculosis."

Massachusetts

May Meeting.—The regular meeting of the Massachusetts Veterinary Association was held at the Department of Veterinary Science, Massachusetts State College, Amherst, on May 22, 1946. Three papers were presented, all by speakers from Amherst:

Dr. J. B. Lentz: "Official Veterinary School Standards."

Dr. W. K. Harris: "Mastitis Laboratory Testing Service."

Prof. S. N. Gaunt: "A Bovine Artificial Insemination Plan."

s/H. W. JAKEMAN, *Secretary*.

Michigan

Michigan-Ohio Association.—Thirty members of the Michigan-Ohio Veterinary Medical Association met at Adrian on May 28, 1946. Dr. John Lenfesty, of Lyons, president of the Ohio Veterinary Medical Association, and Dr. C. F. Clark, president of the Michigan State Veterinary Medical Association, were introduced during the meeting. The program consisted of two papers:

Dr. F. D. Egan, Detroit: "The Alimentary Canal of the Dog."

Mr. Chas. Figy, Director of Agriculture: "Some Legal Phases of Brucellosis in Michigan."

Officers elected for the coming year are: Dr. A. H. DeGroot, Dundee, *president*; Dr. Glenwood Carr, Metamora, O., *vice-president*; Dr. Henry Eames, Manchester, *secretary*.

s/C. F. CLARK, *Resident Secretary*.

Meet at Holland.—The Western Michigan Veterinary Medical Association held a meeting at Holland during the annual tulip festival. The speaker was Mr. James DePray, chemist and manufacturer of vitamin products.

s/C. F. CLARK, *Resident Secretary*.

Missouri

Kansas City Association.—"Some Problems Confronting the Veterinary Practitioner," by Dr. W. C. McConnell, of Holdenville, Okla., was the main feature of the regular monthly meeting held at Hotel Continental, on May 21. Dr. McConnell, one of the leading general veterinarians of the Southwest, and well known in the dairy cattle field, discussed the perplexities of clinical work.

s/GAIL B. SMITH, *Secretary*.

Fifty-Fourth Summer Meeting.—The annual summer meeting of the Missouri Veterinary Medical Association was held at Springfield on June 10 and 11, 1946. After the call to order by President J. P. Miller, the following program was presented:

Dr. James Farquharson, Colorado State College, Fort Collins: "Surgical Demonstrations" in motion pictures. Dr. E. W. Millenbruck, Carthage, led the discussion.

Dr. J. H. Krichel, Keokuk, Iowa: "Treating Small Animals in a Mixed Practice." Dr. L. W. Hathaway, Cape Girardeau, led the discussion.

Dr. R. M. Hofferd, Corn States Serum Co., Cedar Rapids, Ia.: "Swine Disease Problems." Dr. W. J. Hayden, Marshall, opened the discussion.

Dr. W. L. Boyd, University of Minnesota, St. Paul: "Infertility and Related Conditions in Bovine Artificial Insemination." Dr. L. E. Bodenweiser, Kirkwood, discussed the paper.

Dr. J. L. Jones, Blackburn, conducted a question box and led a discussion of practice problems. Dr. C. C. Moore, Springfield, conducted a visit to the M. F. A. Bull Farm.

Chairmen of the various committees submitted their reports.

s/J. L. WELLS, *Secretary*.

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St. Louis District.—The July meeting of the St. Louis District Veterinary Medical Association will feature a discussion of heartworm infection in dogs by Dr. V. J. Novy, of Belleville, Ill., and a twenty-minute recital of "Interesting Cases Encountered in Coal Mine Practice," by Dr. W. A. Winslade also of Belleville.

s/C. W. DABBY, *Secretary*.

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Jen-Sal Merger.—Dr. Guy G. Graham, president of Jensen-Salsbery Laboratories, Kansas City, reports a merging of interests with Vick Chemical Co., New York. No change is contemplated in present management, personnel, or the long-established policy of sales to qualified veterinarians only. Although Jen-Sal will operate as an independent subsidiary, the merger will make available the research and production facilities needed to provide a source of supply for the antibiotic agents and new biochemical products of modern veterinary medicine.

Montana

Stop These Dairy Losses.—Dr. Howard Welch and Mr. J. O. Tretsven, of Montana State College, at Bozeman, have written a circular bearing this title. It discusses constipation and indigestion, mastitis, bloat, milk fever, brucellosis, scours of calves, calf pneumonia, ringworm, blackleg, and stunted and unthrifty calves.—*Montana Ext. News Service*.

Nebraska

Elections in Northeast.—The Northeast Nebraska Veterinary Medical Association met in Norfolk for its annual meeting. Speakers were Dr. Guy Railsback, of Muncie, Ind.; Dr. J. R. Snyder, state veterinarian, of Lincoln; and Dr. E. L. Pederman, of Lincoln.

Officers elected for the coming year are: Dr. Kenneth Bruce, Orchard, *president*; Dr. W. J. Price, Wisner, *vice-president*; and Dr. F. O. Lundberg, Wausau, *secretary-treasurer*.—*Fort Dodge Biochemic Review*.

New Jersey

Veterinary Division of White Laboratories.—Dr. Raymond C. Surface (K.S.C. '15) has been appointed director of the veterinary division established by White Laboratories, Newark. Since graduation, Dr. Surface has engaged in practice, has served as a Veterinary Inspector with the BAI, and has been active in the commercial production of veterinary pharmaceutical and biological products.

New York

City Association.—The regular meeting of the Veterinary Medical Association of New York City, held on June 5, 1946, was in the nature of a symposium on leptospirosis. Dr. Gerry B. Schnelle, of Angell Memorial Hospital, Boston, acted as moderator. Dr. J. Stewart Crawford, of New Hyde Park, L. I., outlined "Public Relations Aspects of Leptospirosis." Dr. L. I. Desson, of Rochester, discussed "Clinical Diagnosis." Capt. C. O. Roby, Second Service Command Laboratory, New York, demonstrated "Laboratory Diagnosis and Pathology." Dr. L. W. Goodman, of Manhasset, L. I., spoke on "Treatment."

s/C. R. SCHROEDER, *Secretary*.

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Cornell Professor to Germany.—Prof. S. J. Brownell, of the animal husbandry department, has been appointed "chief of livestock and meats" in the Office of Military Government for Germany. His work will involve establishing a program to develop all classes of livestock, and a meats program in the food and agricultural branch.—*Extension News*.

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Proprietary Association of America.—D. F. Green, Ph. D., of the Medical Department, Merck & Co., Rahway, N. J., spoke to a veterinary section luncheon group of the Proprietary Association of America on May 15, 1946. He said that penicillin tablets for oral use may be helpful in treating dogs and cats, that extensive research has been conducted on the treatment of mastitis in dairy cattle, and that another fertile field for development will be in the treatment of certain diseases of horses. He emphasized that it would be premature to philosophize in regard to specific diseases.

Advertising by Goshen Laboratories.—A series of advertisements is being run in *Dog World* and may appear in other journals. The current ad stresses the danger of mistaken lay diagnosis of a foreign body in the stomach of a dog. It says, "A veterinarian could have saved Major by detecting the stone in his stomach by an x-ray examination."

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Death of Simon Flexner.—Dr. Simon Flexner, renowned pathologist of Rockefeller Institute, Johns Hopkins University, U. S. Public Health Service, and University of Pennsylvania, died at the Presbyterian Hospital in New York City, on May 2. He was born in Louisville, Ky., in 1863 and was graduated by the Medical Department, University of Louisville, in 1889. Dr. Flexner was famed for his researches among the more mysterious problems of pathology: anaphylaxis, poliomyelitis, cerebrospinal meningitis, pancreatitis, chemistry of snake venoms, toxalbumins, fat necrosis, and other problems in the upper bracket of pathologic research which laid down solid foundations for future investigations.

North Dakota

Keep the Brakes on Vaccination.—Dr. T. O. Brandenburg, on the North Dakota Livestock Sanitary Board, Bismark, has prepared an item under the above title as a reply to an article that appeared in *Country Gentleman* entitled "Take the Brakes Off Vaccination," by Glenn E. Rogers. As published in *The Dakota Farmer* for May 4, 1946, it moderates some of the excessive claims made for vaccination with strain 19, and explains a few of the more common causes of misunderstanding when results are not fully up to expectations.

Ohio

Fifteenth Annual Conference.—The conference of the College of Veterinary Medicine, The Ohio State University, Columbus, was held June 12 to 14, 1946. Dr. Howard L. Bevis, president of The Ohio State University, delivered the address of welcome. Other speakers from the university staff included:

Dr. F. J. Kingma: "Recent Advances in Drugs and Fluid Therapy."

Dr. L. W. Goss: "The Pathology of Non-Parasitic Dermatitis."

Prof. J. L. Stansbury: "Developments in Artificial Insemination."

Dr. R. E. Rebrassier: "New Anthelmintics and Insecticides."

Prof. T. S. Sutton: "Recent Experimental Work in Calf Feeding."

Dr. H. G. Bond, In Charge Brucellosis Control, Division of Animal Industry, Ohio Department of Agriculture: "Recent Developments in the Control of Brucellosis."

Speakers from outside the state who participated in the program were:

Dr. C. N. Bramer, Evanston, Ill.: "Oral Surgery."

Dr. J. R. Dinsmore, Evanston, Ill.: "Laboratory Methods in Diagnosis."

Dr. E. F. Schroeder, Boston, Mass.: "Treatment of Fractures."

Dr. W. Wisnicky, Fond Du Lac, Wis.: "Handling Dairy Herds Infected with Trichomoniasis."

Dr. C. R. Donham, Lafayette, Ind.: "Brucellosis in Swine."

Dr. Geo. Hopson, New York, N. Y.: "Better Milking Methods as an Aid in Mastitis Control."

Dr. John Delaplane, Kingston, R. I.: "Newcastle Disease" and "Diseases of the Turkey."

Dr. James Farquharson, Fort Collins, Colo.: "Surgery in Cattle."

Dr. H. K. Bailey, of Wilmington, O., took his place with all of the preceding speakers as a member of the panel for "Discussion on General Practice."

The session for each day was opened with motion pictures dealing with the following subjects: "A Heritage We Guard," "Vesicular Diseases of Animals," and "Avian Pneumoencephalitis."

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Columbus Host of Old Breeders' Association.

—The seventieth annual meeting of the Ayrshire Breeders' Association was held in Columbus May 8-9. One of the principal speakers was Dr. W. E. Petersen, of the University of Minnesota, whose subject was: "The Science of Milk Production," the vivid motion picture that has enlightened many a veterinary audience. This old society seldom meets west of the eastern states.

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Memorial Library at O.S.U.—A bequest of \$2,000 for a memorial library at the College of Veterinary Medicine of The Ohio State University was provided for in the will of the late Dr. C. H. Case. It is given "in appreciation of the assistance and inspiration received over a long period of years from the College of Veterinary Medicine," and is to be known as the Claude H. Case and John F. Plantz Library Foundation. The principal sum will be invested, and the income used only to buy books and periodicals on veterinary medicine, thus assuring a continuing memorial. Dr. Case graduated from O. S. U. in 1904, and died two years ago as he was leaving the AVMA convention in Chicago.

Oklahoma

Hereford Bull Breaks Price Record.—The all-time price record for beef breeds was broken in January when Del Zento 1st, young herd bull of the Lazy D Ranch of Ada, sold to George Rodanz of Stouffville, Ont., at the ranch's auction, for the sensational figure of \$51,000. The offerings consisting of 45 head, averaging



—American Hereford Journal Photo
W. A. Delaney, Jr., owner of Lazy D. Ranch, shaking hands over \$51,000 worth of live beef with auctioneer Dan Thornton of Colorado, while Canadian George Rodanz smiles at the camera. He stopped the other bidders cold by jumping from \$48 to \$51 thousand after the diddling bids above \$25 thousand.

\$10,175 for bulls and \$969 for heifers, went to two foreign countries and six states. Del Zento is described as a bull "of impressive depths and beefiness from end to end."

Pennsylvania

Physical Improvement of the School of Veterinary Medicine.—It is possible at this time to announce a number of improvements at the veterinary school which have not heretofore been reported, the majority of them improvements in the physical plant. The students' lounge is being redecorated and refurnished, including the installation of a terazzo tile floor. The students' locker room is being similarly reconditioned and a number of new lockers are being installed. The small animal hospital is being improved by providing a tile sterilizer room adjacent to the operating room, which is to be completely equipped with the most modern sterilizing equipment. Such facilities are required to successfully carry out the program of completely aseptic surgery which has been inaugurated in the hospital. Several dressing rooms for the hospital staff are also being provided.

It is planned to install a pressure steam line leading to the veterinary building which will provide steam for sterilizing equipment. A number of new sterilizers and autoclaves are now on order, and a new water still with a capacity of ten gallons per hour will soon be installed.

The basement of the north wing will be completely renovated and equipped as a modern room for the housing of small experimental animals. A completely equipped technical labor-

atory is being provided for the anatomy department to provide adequate facilities for histologic and embryologic research, and a technician has been added to the staff of this department to expedite such work. A technician will also be employed to assist in the parasitologic work of the pathology department.—*The Pennsylvania Gazette*.

Penn Allegheny Officers.—The following officers were recently elected to serve for the coming year by the Penn Allegheny Veterinary Medical Association: Dr. Maurice W. Neidigh, State College, *president*; and Dr. W. T. S. Thorp, of the School of Agriculture, State College, *secretary*.

s/R. C. SNYDER, *Secretary*.

Keystone Election.—The Keystone Veterinary Medical Association of Philadelphia elected the following officers at a meeting on May 22, 1946: Dr. J. V. McCahon, Downingtown, *president*; Dr. H. Stover, Langhorne, *vice-president*; Dr. Rex Brooks, Haverton, *recording secretary*; Dr. R. C. Snyder, Upper Darby, *corresponding secretary*; Dr. D. Lee, Drexel Hill, *treasurer*; Dr. E. L. Stubbs, Dr. S. F. Scheidy, Dr. C. Neuhauss, Dr. W. Ivens, and Dr. V. W. Ruth, *trustees*.

s/R. C. SNYDER, *Corresponding Secretary*.

Conestoga Shad Dinner.—The Conestoga Veterinary Club held the thirty-first annual shad dinner on May 17, at Lancaster, Pa. Fifty-four members and friends attended the dinner meeting and enjoyed the program. Many members of the faculty at the School of Veterinary Medicine, University of Pennsylvania, and of the Pennsylvania Bureau of Animal Industry were present.

Dean R. A. Kelser reviewed, briefly, the activities and plans for the School of Veterinary Medicine at the University of Pennsylvania, and Dr. C. P. Bishop, Director of the Pennsylvania Bureau of Animal Industry, spoke on the activities of the Bureau.

Dr. E. L. Stubbs, School of Veterinary Medicine, University of Pennsylvania, discussed Newcastle disease.

Dr. Harry Martin, School of Veterinary Medicine, University of Pennsylvania reported on recent changes and improvements in the Department of Pathology at the School of Veterinary Medicine, University of Pennsylvania.

The activities of the Pennsylvania State Veterinary Society were reviewed by Dr. H. C. Kutz, who gave an interesting summary of the work in which veterinarians in Pennsylvania are engaged. Following this, Dr. S. F. Scheidy discussed, briefly, some of the activities of the American Veterinary Medical Association and plans for the 1946 convention.

Dr. R. C. Gross, closed the meeting with

encouraging remarks regarding the activities and need for support of veterinary associations.

s/T. HAROLD McMURRAY, *Secretary*.

Personal.—Dr. C. Louis Schulster, of Philadelphia, was bitten by a rabid dog some time ago. The Pasteur treatment was administered, and was followed by edema of the spinal cord with a paralysis that slowly progressed until it involved one-half of the thoracic cavity. He has been confined to Temple University Hospital since early in April.

Personal.—Dr. E. T. Booth, School of Veterinary Medicine, University of Pennsylvania, is suffering from a compound articular fracture of the humerus, sustained by a fall.

Texas

Summer Meeting.—The State Veterinary Medical Association of Texas met at Texas A. & M. College June 4-5, 1946. After the address of welcome by Mr. D. W. Williams, vice-president of the college, the following speakers appeared on the scientific program:

Dr. J. Wilford Olsen, Angleton Experiment Station, Angleton: "Liver Flukes—Their Diagnosis and Control."

Dr. H. A. Smith, Iowa State College, Ames: "Pathological Lesions as Aids in Diagnosis." Illustrated in color.

Dr. Glen L. Dunlap, Ashe Lockhart Co., Kansas City, Mo.: "Rabies."

Dr. I. F. Huddleson, Michigan State College, Lansing: "Brucellosis."

Dr. J. W. Torbett, M. D., Marlin: "Brucellosis from the Standpoint of the Medical Practitioner."

Dr. R. C. Klussendorf, of the AVMA, Chicago: "Some Approaches Made by Other States Concerning the Problem of Mastitis."

At the dinner, which was attended by the veterinarians and their wives, executive vice-president Frank C. Bolton spoke about the plans for the future of the Veterinary College, and Dr. Klussendorf discussed the problems confronting the AVMA, with special emphasis on the Research Fund. He also acknowledged the outstanding work being done by the Ladies' Auxiliary. Dr. W. W. Armistead acted as toastmaster.

Officers elected for the coming year were: Dr. H. Shull, Texarkana, *president*; Dr. W. W. Armistead, College Station, *vice-president*; Dr. E. W. Wupperman, Austin, *secretary-treasurer* reelected; Dr. E. A. Grist, College Station, *corresponding secretary* and *editor*, reelected, and Dr. L. G. Cloud, Fort Worth, *resident secretary* for the AVMA.

Ark-La-Tex Meeting.—The Arkansas-Louisiana-Texas Veterinary Medical Association met

on May 7 to hear Dr. R. D. Turk, head of the Parasitology Division, School of Veterinary Medicine, Texas A. & M. College, discuss "Parasitism of Farm Animals—Diagnosis and Control."

s/A. V. YOUNG, *President*.

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Meeting in Panhandle.—The Panhandle Veterinary Medical Association met at Amarillo on May 11, 1946. The meeting, at the hospital of Dr. L. M. Griffin, emphasized large animal practice and demonstrations of clinical procedures. Mr. D. W. Williams, vice-president of Agriculture, Texas A. & M. College, was the honored guest at the banquet.—*Texas Vet. Bull.*

Washington

Personal.—Dr. Carl A. Johnston (O.S.U. '04), of Tacoma, has retired from the federal meat inspection service after having served for forty-two years. He has been inspector in charge at the Carstens Packing Co. and has not yet made definite plans for the future.

West Virginia

Kiwanis Speaker.—Dr. S. E. Hershey, of Charleston, was the speaker at the Kiwanis meeting for May 21, 1946, according to the *Kiwanis Gasser*. The item indicates that the members learned things about the veterinary profession which had not been previously known to them.

Wisconsin

Semi-Annual Meeting.—The thirty-first semi-annual meeting of the Wisconsin Veterinary Medical Association was held at Wisconsin Dells June 18 and 19, 1946. After the address of President Clarence Otteson, of Edgerton, and the reports of committee chairmen, the scientific program included the following speakers:

Dr. J. J. Porter, University of Wisconsin, Madison: "Results of Investigations of Penicillin in Mastitis." Dr. R. A. Garman, Tomah, and Dr. J. B. Collins, Chippewa Falls: Discussion.

Dr. Frank Breed, Norden Laboratories, Lincoln, Neb.: "Diseases of Shoats and Adult Swine." Dr. J. R. Fesler, Janesville, and Dr. Rolland Anderson, Elkhorn: Discussion.

Dr. W. Wisnicky, Fond Du Lac: "Observations on Artificial Insemination in Cattle." Dr. M. D. Hutchinson, Clintonville, and Dr. K. B. Hammerberg, New London: Discussion.

Dr. H. C. H. Kernkamp, University of Minnesota, St. Paul: "Diseases of Newborn Pigs." Dr. C. K. Whitehair, University of Wisconsin, Madison: Illustrated discussion.

Prof. A. E. Schaefer, University of Wisconsin: "Results of Recent Investigation in Mink Nutrition." Illustrated. Dr. C. K. Whitehair and Dr. W. Wisnicky: Illustrated discussion.

Dr. Wayne H. Riser, Des Moines, Ia.: "Febrile Diseases." Illustrated. Dr. C. A. Deaderman, Madison, and Dr. C. M. Heth, LaCrosse: Discussion.

Dr. J. T. Schwab, Oconomowoc: "Acetonemia in Dairy Cattle." Dr. Gravers K. L. Underbjerg, University of Wisconsin, Dr. E. D. Smith, East Troy, and Dr. H. W. Jacobson, Denmark: Discussion.

Dr. W. L. Boyd, University of Minnesota: "Infertility of Cattle." Dr. T. H. Ferguson, Lake Geneva, and Dr. H. Lothe, Lake Forest, Ill.: Discussion.

At the banquet, Mr. Ben Berger was master of ceremonies, with acts of magic and prestidigitation. The Fraunfelder Family furnished Swiss music, and Chief Evergreen Tree presented bird and animal imitations.

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Silver Fox Research.—Dr. C. K. Whitehair (K.S.C. '40), holding a silver fox in a burned out research laboratory at the University of Wisconsin, is pictured in the *Wisconsin State Journal*, Madison, in connection with a story telling of the work in feeding and disease prevention carried on there, which goes on even though fire has charred the timbers of the building and made most of it unfit for experimental purposes.

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Cattlemen Defrauded.—Pleading guilty to defrauding farmers, Mr. Homer Rundell, of Platteville, admitted that he purchased grade Guernsey calves for small sums of money, registered them as purebred animals from his own herd, and then resold them at a considerable profit. This was done from 1934 until 1945, and involved more than 200 animals.

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Southeastern Association.—The Southeastern Wisconsin Veterinary Medical Association met at Beaver Dam on May 23, 1946, to hear Prof. Banner Bill Morgan discuss the problem of trichomoniasis, and Dr. J. J. Porter outline methods of controlling mastitis. Both speakers are from the Veterinary Science Department of the University of Wisconsin. Both subjects proved to be so interesting that a lively discussion period followed, with many of the 54 veterinarians present taking part.

s/J. S. HEALY

Corresponding Secretary

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Veterinarian in Conservation Congress.—The *New Glarus Post* (May 22, 1946) reports that Dr. H. F. Zingg, of New Glarus, was elected a delegate to the Conservation Congress held at Madison June 10 and 11, 1946.

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Personal.—Dr. Raymond A. Woodruff (Cornell '41) has located at Monticello where he will open a veterinary hospital and enter general practice. Preceding three years of service in the Veterinary Corps of the United States Army, Dr. Woodruff practiced at Norwich, New York.

Personal.—Dr. Paul Radcliffe (Corn. '43), has opened an office and general practice at 401 1/2 East Main St., Waupun.

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Personal.—Dr. Harry Radcliffe (Corn. '45), is completing a new hospital on the Rockton Road, Beloit.

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Personal.—Dr. Steven Jaksekovich, a graduate of the University of Zagreb, Yugoslavia, who has taken additional work at the University of Berne, Switzerland, has located at 421 Milwaukee St., Kewaunee.

FOREIGN

Holland

Flooded Lands.—This war-torn country has been such a prolific source of food supply that the world is anxious to know to what extent its arable land was damaged by the flooding of farms by the German army and how long it will require to reclaim them. The facts are less grave than was announced. About one-sixteenth of the country's farm land was flooded with salt water and about the same area with fresh water. One-half that was flooded with salt water, when drained and planted in 1945, yielded from 75 to 85 per cent of normal. The yield, however, would be lower in a dry year because of the salt the ground contains. Holland agriculture is, therefore, not as seriously damaged as first reports indicated.

Palestine

Leptospirosis in Cattle.—Bacteriologists have described two species of *Leptospira*: *L. icterohemorrhagiae* and *L. canicola*, the specific organisms of Weil's disease of man and dogs, respectively. No mention in veterinary literature has been made of *Leptospira bovis*, the cause of an identical disease in cattle, isolated by Freund in 1942 and described by Bernkopf of Jerusalem in coöperation with others (*J.A.M.A.*, May 18, 1946). In calves, the disease runs a course comparable to that of man (veterinarians, butchers, farmers, and others exposed to animals) but serologically and pathologically differs from the two well-known species. Calves develop a high temperature, leucocytosis, jaundice, and the survivors eliminate *Leptospira* in the urine from three weeks to two months. Some cases run a mild course without jaundice or organic symptoms. Autopsies show cholangitis and nonpurulent, interstitial nephritis with focal necrosis of the tubular epithelium, similar to the lesions of human cases.

COMING MEETINGS

Idaho Veterinary Medical Association. Boise, Idaho, July 1-2, 1946. Phil H. Graves, Box 183, Idaho Falls, Idaho, secretary.

Montana Veterinary Medical Association. Helena, Mont., July 8-9, 1946. E. A. Tunnicliff, Montana Agricultural Experiment Station, Bozeman, Mont., secretary.

Georgia Coastal Plain Experiment Station. Short Course for Veterinarians. Georgia Coastal Plain Experiment Station, Tifton, Ga., July 9-10, 1946. W. L. Sippel, Dept. of Animal Diseases, Georgia Coastal Plain Experiment Station, head.

New York State Veterinary Medical Association. Syracuse, N. Y., July 9-11, 1946. J. J. Regan, 1231 Gray Ave., Utica, N. Y., secretary.

Virginia State Veterinary Medical Association. Princess Anne Hotel, Fredericksburg, Va., July 10-12, 1946. R. D. Hatch, Virginia Polytechnic Institute, Blacksburg, Va., secretary.

North Dakota Veterinary Medical Association. Fargo, N. Dak., July 15-16, 1946. F. M. Bollin, 1503 S. 6th St., Fargo, N. Dak., secretary-treasurer.

Northwest Veterinary Medical Association. New Washington Hotel, Seattle, Wash., July 16-18, 1946. M. O. Barnes, P. O. Box 1163, Olympia, Wash., secretary-treasurer.

West Virginia Veterinary Medical Association. Gore Hotel, Clarksburg, W. Va., Aug. 5-6, 1946. R. M. Johnson, 710 Red Oak St., Charleston, W. Va., secretary-treasurer.

American Veterinary Medical Association. Eighty-third Annual Meeting. Hotel Statler, Boston, Mass., Aug. 19-22, 1946. J. G. Hardenbergh, 600 S. Michigan Ave., Chicago 5, Ill., executive secretary.

Southern Veterinary Medical Association and Kentucky Veterinary Medical Association. Brown Hotel, Louisville, Ky., Sept. 30, and Oct. 1-2, 1946. F. M. Kearns, 3622 Frankford Ave., Louisville 7, Ky., secretary-treasurer.

Purdue University. Short Course for Veterinarians. Purdue University, Lafayette, Ind., Oct. 2-4, 1946. C. R. Donham, Dept. of Veterinary Science, Purdue University, head.

Pennsylvania State Veterinary Medical Association. Penn Harris Hotel, Harrisburg, Pa., Oct. 9-11, 1946. R. C. Snyder, N. W. Cor. Walnut St. and Copley Rd., Upper Darby, Pa., secretary.

Eastern Iowa Veterinary Association, Inc. Hotel Montrose, Cedar Rapids, Iowa, Oct. 15-16, 1946. C. C. Graham, Wellsburg, Iowa, secretary.

University of Missouri. Short Course for Veterinarians. University of Missouri, Columbia, Nov. 4-6, 1946. A. J. Durant, Dept. of Veterinary Science, University of Missouri, chairman.

American Public Health Association. Cleveland, Ohio, the week of Nov. 11, 1946.

United States Livestock Sanitary Association. Hotel La Salle, Chicago, Ill., Dec. 4-6, 1946. R. A. Hendershott, 33 Oak Lane Ave., Trenton 8, N. J., secretary-treasurer.

Minnesota State Veterinary Medical Society. Jan. 6-8, 1947. H. C. H. Kernkamp, University Farm, St. Paul 8, Minn., secretary-treasurer.

Chicago Veterinary Medical Association. Palmer House, Chicago, Ill., the second Tuesday of each month. Robert C. Glover, 1021 Davis St., Evanston, Ill., secretary.

Massachusetts Veterinary Association. University Club, Boston, Mass., the fourth Wednesday of each month. H. W. Jakeman, 176 Federal St., Boston 10, Mass., secretary-treasurer.

New York City Association. Hotel Pennsylvania, New York, N. Y., the first Wednesday of each month. C. R. Schroeder, Lederle Laboratories, Inc., Pearl River, N. Y., secretary.

Saint Louis District Meetings. Roosevelt Hotel, St. Louis, Mo., the first Friday of each month. C. W. Darby, Dept. of Animal Pathology, Ralston-Purina Co., St. Louis 2, Mo., secretary.

Houston Veterinary Medical Association. Houston, Texas, the first Thursday of each month. Edward Lepon, Houston, Texas, secretary-treasurer.

STATE BOARD EXAMINATIONS

Alabama—The Louisiana State Board of Veterinary Medical Examiners will hold its next examination July 5-6, 1946, in Auburn, Ala. Address inquiries to I. S. McAdory, secretary-treasurer, Live Stock Sanitary Division, Dept. of Agriculture and Industries, Auburn, Ala.

Louisiana—The Louisiana State Board of Veterinary Medical Examiners will hold its next examination Aug. 14, 1946, at the State Capitol, Baton Rouge, La. Only applicants from accredited colleges are eligible. Address inquiries to J. Arthur Goodwin, secretary, New Iberia, La.

Nebraska—The Nebraska Bureau of Examining Boards will hold its next veterinary examination June 20-21, 1946, 8:30 a.m., at the State Capitol Bldg., Lincoln, Neb. Applications must be filed with the Bureau at least 15 days prior to the first day of the examination. Address inquiries to Oscar F. Humble, director, Bureau of Examining Boards, Dept. of Health, Room 1009, State Capitol Bldg., Lincoln 9, Neb.

North Carolina—The North Carolina Veterinary Medical Examining Board will hold its next examination June 27, 1946, at the George Vanderbilt Hotel, Asheville, N. Car. Address

inquiries to P. C. McLain, secretary-treasurer, Route 1, High Point, N. Car.

Utah—The Utah Veterinary Examining Board will hold its next examination June 10-11, 1946, Room 326, Capitol Bldg., Salt Lake City, Utah. Address inquiries to W. H. Hendricks, chairman of board, Room 326, Capitol Bldg., Salt Lake City, Utah.

Virginia—The Virginia State Board of Veterinary Examiners will hold its next examination July 1-2, 1946, at the John Marshall Hotel, Richmond, Va. All applications must be filed with the secretary ten days prior to examination. Address inquiries to H. T. Farmer, secretary-treasurer, Box 436, Richmond 3, Va.

West Virginia—The West Virginia Veterinary Board will hold its next examination Aug. 5, 1946, 9:00 a.m., at the Hotel Gore, Clarksburg, W. Va. Applications must be filed with the secretary at least ten days before date of examination. Applications accepted from graduates of recognized and approved schools only. Address inquiries to W. E. Trussell, secretary, Charles Town, Jefferson County, W. Va.

BIRTHS

To Dr. (O.S.U., '39) and Mrs. Samuel Melworth, 1519 Petersbury Pike, Richmond 24, Va., a daughter, Sue Roberta, April 16, 1945.

To Dr. (I.S.C., '40) and Mrs. G. E. Brandt, Garnavillo, Iowa, twin daughters, Jean and Joan, Nov. 29, 1945.

To Dr. (I.S.C., '43) and Mrs. Robert E. Savage, No. Cedar St., Monticello, Iowa, a son, David Rex, Feb. 28, 1946.

To Dr. (I.S.C., '43) and Mrs. Albin J. Nelson, Nashua, Iowa, a son, Alvin James, March 20, 1946.

To the late Lt. (I.S.C., '43) and Mrs. R. C. Banks, Tipton, Iowa, a son, Robert Carl, Jr., March 25, 1946.

To Dr. (I.S.C., '38) and Mrs. Robert M. Scott, 1501 S. Main Ave., Sioux Falls, S. Dak., a son, David Robert.

MARRIAGES

Dr. John Curtis McIntire (I.S.C., '43), 211 S. Niagara St., Maquoketa, Iowa, to Miss Vernelle Mabry, Shreveport, Iowa, Feb. 9, 1946.

Dr. Donald E. Moore (I.S.C., '45), Decorah, Iowa, to Miss Ilene Meyer, Decorah, Iowa, April 21, 1946.

Dr. Orlo L. Haight (I.S.C., '45), Mount Vernon, Iowa, to Miss Mary McCulloch, Eagle Grove, Iowa, April 27, 1946.

Dr. Murray R. Levy (A.P.I., '43), 540 N. 180th St., New York 33, N. Y., to Miss Diana Reiner, New York, N. Y., May 30, 1946.

DEATHS

★**A. H. Burns** (St. Jos. '14), 70, Bucklin, Kan., died May 16, 1946, at Dodge City, Kan., after an illness of two years. Dr. Burns was born at Dwight, Ill. He received his D.V.M. in 1914, and practiced in Hepler, Kan., before he and his wife came to Bucklin. He was admitted to the AVMA in 1915.

H. Carpenter (Ont. '88), Detroit, Mich., died in March, 1946.

★**D. S. Church** (Ont. '95), Scranton, Pa., died April 2, 1946. Dr. Church was born at Scranton on Aug. 21, 1875. He married Nellie Mae Oakley in 1896. He was admitted to the AVMA in 1929.

C. B. Clement (K.C.V.C. '05), Topeka, Kan., died May 5, 1946, in Santa Barbara, Calif. He was born in Kansas City, and after his graduation entered the service of the U. S. BAI. For twenty years before his retirement, he was supervisor of serum and virus inspection for the Topeka district.

M. Corcoran (St. Jos. '13), Neosho, Mo., died April 3, 1946, from cerebral hemorrhage. Dr. Corcoran had practiced in Augusta, Kan., for many years.

★**E. B. Cox** (O.S.U. '45), 22, Akron, Ohio, died May 4, 1946. He was admitted to the AVMA in 1945.

F. F. Dolan (C.V.C. '10), Maxwell, Neb., died in January, 1946.

★**J. A. Dragoo** (C.V.C. '08), 62, Connersville, Ind., died in January, 1946. He was born on Feb. 3, 1883, at Sheridan, Ind., and married Nellie Reese in 1917. Dr. Dragoo was admitted to the AVMA in 1918.

R. F. Erwin (Ont. '01), 67, Alma, Mich., died April 28, 1946. Born in Canada in 1878, Dr. Erwin came to the United States at the age of 3. He was a life member of the Future Farmers of America.

★**W. L. Hanson** (McK. '08), Parkersburg, Iowa, died May 23, 1946, following a long illness. He was born near Nashua, Iowa, on April 1, 1882, and began his practice at Greene, Iowa, in 1917. After a number of years spent in state work, he reentered practice at Aplington in 1933, and moved to Parkersburg in 1936. Dr. Hanson was admitted to the AVMA in 1917.

I. B. Haven (K.C.V.C. '09), Greenfield, Ill., died in April, 1946.

★**M. I. Hays** (I.S.C. '27), 49, Girard, Ill., died in May, 1945. Dr. Hays was pathologist in deficiency diseases at Alabama Polytechnic Institute in 1927-28, and in charge of the small animal clinic there in 1928-29. He was admitted to the AVMA in 1930.

★**F. C. Heninger** (McK. '13), 58, Newark, Ill., died April 28, 1946. He was a prominent practitioner and for years had conducted a drug store in connection with his practice. During

World War I, he was one of the veterinary officers on duty at Veterinary Hospital No. 6, A.E.F., located at Neufchateau, Vosges. He became a member of the AVMA in 1919.

C. E. Hershey (Ont. '06), Tiffin, Ohio, died Feb. 10, 1946.

★**T. B. Hinkle** (O.S.U.) '18), 59, Ashley, Ohio, died March 20, 1946. He was born on Oct. 5, 1886, at Kenton, Ohio, and married Jessie Shoemaker in 1912. Dr. Hinkle, who had been a major in the Veterinary Reserve Corps during World War II, was admitted to the AVMA in 1918.

K. J. McKenzie (Ont. '92), Northfield, Minn., died Jan. 30, 1946.

O. O. Mosby (I.S.C. '35), '41, Sioux Falls, S. Dak., died May 8, 1946, after a heart attack. Following his graduation, he practiced in Northwood, Iowa, until 1942, when he entered the service of the Meat Inspection Division at Sioux Falls. Dr. Mosby was buried at his birthplace, Freeman, S. Dak.

★**R. C. Riegel** (Gr. Rap. '15), 52, Harrisburg, Ill., died April 10, 1946. He was born Dec. 31, 1893, at Harrisburg, and married Elma Nolen in 1916. Dr. Riegel was admitted to the AVMA in 1917.

★**H. H. Rowe** (C.V.C. '18), 52, Richmond, Va., died in December, 1945. He was born on March 1, 1893. Dr. Rowe became a member of the AVMA in 1918.

★**S. F. Wadsworth** (Harv. '99), 68, East Holliston, Mass., died last October. Dr. Wadsworth was born Sept. 25, 1877, at Keene, N. H. He had been a member of the AVMA since 1899.

★**C. W. Watson** (C.V.C. '06), 65, Brunswick, Me., died Sept. 17, 1945. Dr. Watson was born at Harpersville, Me., on March 11, 1880. He was admitted to the AVMA in 1917.

★**E. J. Watson** (Wash. '37), 33, Fort Monmouth, N. J., died April 6, 1946. He was born Dec. 1, 1912, at Portales, N. M. He entered the regular army in 1942 after active duty with the CCC. A graduate of the Army Veterinary School and the Medical Field Service School, he was a major, on duty at Fort Monmouth at the time of his death. Maj. Watson was admitted to the AVMA in 1938.

★**J. M. Whittlesey**, 69, Marbledale, Conn., died May 30, 1946. He had served as commissioner of domestic animals from 1917-1929, when he received special recognition for his work from the University of Connecticut, and also served as dairy inspector for the state of Connecticut. He had been a representative in the general assembly during his residence in Morris, Conn. Mr. Whittlesey was an honorary member of the AVMA.

★**J. H. Winstanley** (U.P. '10), Philadelphia, Pa., died May 15, 1946. Dr. Winstanley had been employed by the Pennsylvania state BAI for several years, and then acted as pharmacist at the University of Pennsylvania hospital. He was admitted to the AVMA in 1912.

★Indicates member of the AVMA.

THE VETERINARY PROFESSION AND THE WAR

Current Needs of the Veterinary Corps

Officers serving under commissions in the Veterinary Corps, Army of The United States, are eligible for release from the service upon completion of thirty-nine months service. It is contemplated that the length of service criterion may be lowered shortly so as to be more nearly in line with the criteria for other corps of the Medical Department. Separations under the current length of service criterion, and the additional number of separations should the criterion be lowered, will result in a critical shortage of veterinary officers necessary to meet the Army's requirement.

The War Department has authorized a procurement objective for the appointment of 200 first lieutenants in the Veterinary Corps, Army of the United States. Applications for commissions are solicited and it is hoped that the number who apply for, and accept, commissions will be adequate to meet the requirements, and that it will not be necessary to resort to induction of veterinarians as was recently necessary in the case of dentists.

Applicants must be graduates of approved schools of veterinary medicine and physically qualified for general service under the provisions of mobilization regulations 1-9. All appointments will be made in accordance with the provisions of AR 605-10 and will be for the duration of the present emergency (war period) and six months thereafter, unless sooner terminated.

The necessary forms to be completed and submitted as an application may be obtained from the dean of any of the approved schools of veterinary medicine or by request addressed to The Surgeon General of The Army, War Department, Washington 25, D. C., attention Veterinary Division.

Applications should be submitted on War Department AGO Form 0850 and 0850-1, and accompanied by

- 1) A statement that the applicant is or is not a selective service registrant.

- 2) If a selective service registrant, a statement from the applicant's local board, giving his selective service classification and certifying that his induction has not been ordered.

- 3) Evidence that he is a bona fide graduate of an approved school of veterinary medicine, or a certificate from the dean that he will graduate within sixty (60) days.

- 4) Three completed copies of WD AGO Form 178-2, classification questionnaire of Medical Department officers.

- 5) Report of physical examination, WD AGO Form 63.

Applicants are authorized to report to the nearest army installation for physical examination. Necessary travel incident to this examination must be performed at applicant's expense.

The completed forms with accompanying papers should be forwarded to the Procurement, Separation, and Reserve Branch, Military Personnel Division, Office of The Surgeon General, Washington 25, D. C.

As a further means of alleviating the shortage of veterinary officers, authority has been granted for recalling to extended active duty (upon their own application) a limited number of qualified veterinary officers who hold commissions in the Officers Reserve Corps. An officer now holding, or who has held, a commission in the Army of The United States may become eligible for recall provided he applies for, is offered, and accepts a commission in the Officers Reserve Corps under the provisions of War Department Circular 194, 1945. An officer to be recalled must agree to serve in a category I or II status, must meet physical standards for overseas service, and must accept a temporary Army of The United States appointment in a grade not higher than the grade in which the officer served prior to processing for relief from active duty. Officers recalled are subject to overseas assignment and subject to general downward grade readjustment procedures that may be in effect for other officers on duty. Complete details concerning recall to active duty were published in ASF Circular 82, April 1, 1946, and amendments thereto.

An officer desiring to be recalled for extended active duty must apply for such duty in writing to the adjutant general.

Army Veterinary Service Depicted at the American Medical Association Convention, San Francisco

The Medical Department exhibit to be displayed at the San Francisco convention of the American Medical Association, July 1-5, 1946, includes a section portraying activities of the Army Veterinary Corps during World War II. The exhibit was prepared under the direction of Col. James A. McCallam, director of the Veterinary Division, Surgeon General's Office.

Meat and dairy inspection, service with animal units, and research activities of the Army Veterinary Corps are highlighted in this exhibit. Photographs in black and white and in color, charts, projected color slides, and equipment are displayed. Col. Wayne O. Kester, chief of the Meat and Dairy Hygiene Branch, Veterinary Division, SGO, and Major T. C. Jones of the Army Institute of Pathology, Washington, D. C., will be in charge of the exhibit.

Inspection of perishable food products to insure a supply of wholesome food for the armed forces was the activity in which the greater number of Army Veterinary Service personnel were engaged during World War II. The display points out that in a single year, 1945, a total of 8,271,175,085 pounds of foods of animal origin were inspected at time of procurement. Of this amount 246,349,652 pounds were rejected as being unsanitary, unsound, or otherwise not up to contract specifications. In addition, all government-owned food stocks were reinspected, when indicated, at time of shipment, while in storage, and at time of issue to insure that no unnecessary deterioration occurred and that no spoiled or contaminated food was issued to troops. The effectiveness of this inspection is attested by the fact that no serious widespread outbreaks of disease traceable to the issue of unwholesome meat, meat-food, and dairy products occurred among our troops during the war.

The exhibit portrays some of the phases of this activity, including the inspection of meat and meat-food products in the United States and in overseas theaters, the inspection of marine products, the sanitary control of milk and milk products, and the operation of abattoirs in overseas theaters. Equipment for use in food inspection is displayed, including the phosphatase kit for determining the efficiency of pasteurization of milk, indicators for determining the edibility and keeping quality of oysters, special thermometers for determining the internal temperature of meat, kits for detecting chemical warfare agents on foods, and vacuum gauges for testing canned food products.

Research activities of the Army Veterinary

Corps were intensified during the war. Many were conducted as top-secret projects and are just being made known to the public. The results of a few of these projects are portrayed in the exhibit. Important contributions to the control of such diseases as rinderpest, an Asiatic cattle plague which would have resulted in disaster to our national livestock industry had it accidentally gained entrance into the United States, or had it been introduced intentionally as an enemy method of biological warfare; equine periodic ophthalmia, which causes more blindness in horses and mules than all other diseases and injuries combined; equine influenza, similar to the World War I "flu" of man; equine encephalomyelitis, horse sleeping sickness which may also infect man; and leptospirosis, a disease found in dogs and which may also infect man, are described in the exhibit.

Development of protective measures for animals against chemical warfare agents was another important research activity in which veterinary officers were engaged. Gas masks for dogs and horses were developed. Part of this equipment will be displayed in use on a War Dog. The War Dog and his trainer are loaned to the exhibit by the Remount Service of the Quartermaster Corps.

Depicted also are improvements in biologic products accomplished by the Army Veterinary Corps during World War II as well as new laboratory methods for food analysis.

The United States Army used far fewer animals in this war than in World War I and fewer than did some of our allies, but when animals were used, they were essential to the accomplishment of the mission. Consequently, veterinary service with animals was vital during World War II. Some highlights of this animal service are portrayed in the exhibit. The air transportation of horses and mules, developed in the China-Burma-India theaters, and the air lift of some 2,600 horses and mules over the "hump" are portrayed. The instruction of Chinese Army personnel in preventive medicine—a vital aid to our Chinese allies—is portrayed.

The elimination of equine encephalomyelitis in U. S. Army animals by use of vaccine prepared by the Army Veterinary School is also displayed. Mention is also made of the production of more than a million dollars worth of biologic products by the Army Veterinary School during the fiscal year 1946. Reference to veterinary service with Signal Corps pigeons, War Dogs, and Remount breeding activities is also included.

Police Dogs for Army

On June 1, the Army began to purchase German Shepherd dogs to replace dogs which had been lent by their owners and later returned to civilian status. Healthy and fearless Shepherds from 1 to 3 1/2 years old, and weighing from 70 to 90 lb., are being bought for training as messengers, scouts, and sentries.

Another Veterinarian in Navy

Dr. Meredith R. Gardiner, of the University of Pennsylvania, Philadelphia, served in the U. S. Navy from Nov. 1, 1942, to Oct. 26, 1945. Dr. Gardiner and Dr. Jenne, whom we mentioned in the May JOURNAL, were classmates, graduating in the class of 1940, and followed similar naval paths.

Dr. Gardiner received his preliminary instruction at Harvard, was assigned as an ensign to the Naval Air Station, Quonset Point, R. I., until September, 1943, and was then ordered to the new light aircraft carrier USS

Monterey which operated as part of the fast carrier task force of the Third and Fifth fleets. Continuous operation for eighteen months in the great push against the Japanese included the actions which culminated in capture of the Gilbert Islands, the Marshalls, Hollandia, Palau, Leyte Gulf, Guam, and Saipan, as well as the first raids on the island of Truk and on Formosa. During this time, the ship was never touched by enemy fire, but suffered extremely heavy damage in a fire resulting from the typhoon which hit the Third fleet in December, 1944.

Ensign Gardiner served in a non-veterinary capacity as a communications officer. He was promoted to the grade of lieutenant (j.g.) and had charge of all the secret documents and codes, became the ship's radio officer and K-division officer, and was later transferred to Sydney, Australia, as liaison officer to the C-in-C, British Pacific Fleet, Admiral Sir Bruce Fraser. At this time he was again promoted to senior grade lieutenant.

Air Staff Veterinarians' Conference



Staff veterinarians of the major Air Commands, who attended a three-day conference at the Air Surgeon's Office, Headquarters Army Air Forces in Washington, April 29 to May 1. Left to right (seated)—Colonel James C. Barta, V. C., Strategic Air Command, Bolling Field, D. C.; Lt. Colonel Benjamin D. Blood, V. C., Hqs. Army Air Forces, Washington, D. C.; Colonel Charles M. Cowherd, V. C., Tactical Air Command, Langley Field, Virginia; (standing) Lt. Colonel Benjamin F. Leach, V. C., Air Materiel Command, Wright Field, Ohio; Major James C. McIntyre, V. C., Air Training Command, Barksdale Field, Louisiana; and Major Aaron F. Allison, V. C., Sixth Air Force, Panama Canal Zone. Lt. Colonel James R. Karr, V. C., Air Transport Command, Washington, D. C., was not present when the picture was taken.

Upon inauguration of the point system, he was discharged among the early officers to be processed.

Awards and Citations

Major Wesley W. Bertz, V.C., was awarded the Bronze Star Medal posthumously for his heroic achievement. The citation says, in part: "Serving with a hospital in Military Prison Camp No. 1, Cabanatuan, Philippine Islands, Major Bertz rendered outstanding service to his fellow soldiers over a prolonged period despite the most difficult conditions. During the first few months, the death rate assumed alarming proportions due to a diphtheria epidemic as well as frequent outbreaks of dysentery, malaria, beriberi, and pneumonia, yet Major Bertz repeatedly exposed himself to the ravages of these diseases and, by his unflinching loyalty to the patients, prevented what might have become a wholesale decimation of American Prisoners of War. Handicapped by completely inadequate medicinal supply and starvation rations, he worked untiringly and faithfully to curtail the physical and mental deterioration which was becoming apparent among the diseased prisoners. He courageously continued to carry out his assigned duties while suffering from hunger, illness, and exhaustion. By his dauntless spirit of self-sacrifice, untiring devotion to duty, and unwavering courage in the face of increasingly disheartening conditions, Major Bertz was instrumental in saving the lives of many comrades, and his unselfish service exemplified the highest traditions of the United States Army Medical Department."

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Colonel James G. Catlett, Veterinary Reserve Corps, of Miami, Fla. has been awarded the Army Commendation Ribbon, with a citation that says: "During World War II, the Quartermaster Corps successfully accomplished its mission of supplying the United States Army and many of our Allies. This task was made possible only through the combined efforts of all Quartermaster personnel. Your service with the Quartermaster Corps has been exceptional when compared with others of the same grade in similar positions, and I wish to commend you for your outstanding contribution." It was signed by E. B. Gregory, Lieutenant General, The Quartermaster General.

Col. Catlett served in World War I as well as World War II. He was attached to the Western Remount Area and the tactical war dog units, and was later sent to the China-Burma-India Theater.

• • •

Lieutenant Colonel James R. Karr, V.C., was awarded the Legion of Merit in recognition of outstanding service. The citation reads, in part: "As Wing Veterinarian, South Atlantic

Wing, Theater Veterinarian, South Atlantic Theater; and Chief, Veterinarian Branch, Medical Division, Office of the Surgeon, Headquarters, Air Transport Command, during the period from November, 1942, to September, 1945, Colonel Karr, by his resourcefulness, ingenuity, professional ability, determined effort, and ability to organize was largely responsible for the high standard of nutrition, health, and morale of the American personnel stationed in Brazil. His vast experience was instrumental in improving the quality and variety of the food supplied to Air Transport Command personnel scattered throughout all parts of the world."

Death of Major Watson

Major Edward J. Watson, V.C., died April 6, 1946, at Fort Monmouth, N. J., where he was on duty. After two years of active service (1937-1939) with the CCC, he was assigned to the Presidio at Monterey, Calif. In 1942, he was appointed first Lieutenant, V.C., Regular Army, and later promoted to captain, with assignment to the Fourth Air Force Headquarters in San Francisco in March of that year.

In 1942 (at which time he received his promotion to major), Major Watson went overseas, returning in April, 1944, to enter Hammond General Hospital for observation and treatment. He later was transferred to Dibble General Hospital, and when discharged from there, he was assigned to Lockbourne Army Air Base, Ohio, and then to Maxwell Field, Ala.

Major Watson was born Dec. 1, 1912, at Portales, N. M. He graduated from Washington State College in 1937, and was also a graduate of the Army Veterinary School and the Medical Field Service School.

The Veterinarians in Uniform

"They served, suffered, and signed out.

"This, in a nutshell, is the case history of the Veterinary Corps composed of a dozen Filipino officers that served with the USAFFE during the trying days of Corregidor and Bataan.

"They did their bit, and made a darn good job of it," commented Colonel J. Worthington, commanding the Veterinarian unit in Bataan.

"Soon after the Field Medical service school was established at Fort McKinley, on 1 Sept. 1941, under American staff officers, Col. Worthington took the PA veterinary officer trainees under his staff and personally undertook their training in food inspection and routine duties.

"In two weeks, the officer trainees were handling the responsible jobs of food inspection and cavalry chores for the entire camp: they were assigned to the slaughterhouse, cold storage, quartermaster, open market section, cavalry units, etc. Upon completion of the course, they

were sent to the different activated USAFFE divisions.

"From the period of 1 Dec. 1941 to the outbreak of the war, these officers (were) entrusted with the inspection of all open market purchases for the different divisions . . .

"In Bataan, as elsewhere, the veterinary unit provided the troops with a periodic supply of safe, fresh meat . . .

"The U. S. armed forces entrust the task of supervising the procurement of disease-free and wholesome foodstuff, particularly meat and meat products, with the veterinary corps. Because of their specialized training in food inspection, men of this branch of service are solely responsible for whatever harm may arise from the lack, or improper inspection, of food procured from the open market.

"Strangely, however, of the trained officers still in active service, most are performing duties other than what their branch of service calls for. When veterinary officers attached to the Finance and RPD sections were asked why they were not functioning as veterinarians, they claimed that the veterinary corps has not been included in the new T/O & E of PA units. To date, there has not been any veterinary officer sent to the United States for any advanced schooling.

"After 30 June, this year, the Philippine Army will be on its own again. Among the many headaches that it would face will be the procurement of food for a much bigger number of men than before the war. Under section 24 of the National Defense Act, there is provided a veterinary corps under the Medical Service. The question is: Will this corps have a place in the postwar Philippine Army?"

These are the title and excerpts from the text of an item appearing in the Philippine Army News Digest which was sent to the JOURNAL by Dr. K. W. Niemann, V.C., who is with Headquarters of the Eighth Army.

Veterinary Officers Separated from Military Service

Alabama
Conner, Robert F.

California
Christopher, B. C.
Dean, Ben Harrison
Goldsmith, Bernard
Gould, Clinton L.
Hand, Pearl Hugh
Lovik, Stanley A.
Sawyer, Howard E.

Colorado
Clark, Sterling D.

Connecticut
Elting, Stewart E.

Delaware
Greene, Lester M.

Georgia
Akins, Everett H.
Lennon, Thomas W.

Illinois
Emerson, Harry H.
Hasselbalch, N. I.
Tacke, Frederick J.

Iowa
Field, Dale Wirt
Mannasmith, C. H.
Pennings, Arthur W.

Kansas
Twiehaus, Marvin J.

Maine
MacKenzie, W. P.

Massachusetts
Hall, Jonathan P.

Michigan
Brecheisen, A. W.
Failing, Charles H.
Grover, Donald F.
Kuzewski, Henry J.

Minnesota
Fisher, Vurl Eldon
Johanson, L. V.
Larson, Emil V.

Missouri
Jerstad, Arthur C.

Nebraska
Gollehon, Chas. W.

New Jersey
Coyle, Emanuel F.
DeCinque, Peter
Gaydosh, Louis W.
Steinbach, Karl F.
Sylstra, Anthony W.

New York
Babich, Peter J.
Gentile, Frank L.
Jenkins, DuBois L.
Kennelly, Edward M.
Love, W. Graham
McClelland, F. E.
McKim, Orville E.
Payton, Jerome
Saylor, Samuel L.
Walker, Joseph W.
Watkins, Robert R.

North Carolina
Randall, Charles B.

Ohio
Daughtrey, F. D.
Engard, Richard M.
Foley, R. J. J.
Gardner, Richard S.
Ross, Walter E.

Pennsylvania
Apt, Samuel
Barnes, Carl G.
Kroll, Harry M.
Martin, John Edgar
Richter, Jacob B.

South Carolina
Ginn, William
Sweringen, Chas. R.

Tennessee
Eldred, Arthur C.

Texas
Allen, James W.
Lee, Robert E.
Rehkemper, Jack A.

Virginia
Pearl, Martin D.
Wiatt, Alexander T.

Washington
Dungan, William M.
Kirk, Arthur D.
Zook, Roy Firman

West Virginia
Scothorn, Marion W.

Wisconsin
Erickson, Carl F.
Kerns, Robert L.
Marsh, Herbert L.
Meeusen, C. W.

Canal Zone
Juni, Robert P.

Puerto Rico
Clavell, Cesar

Malaria as a War Weapon

An effort on the part of the Germans to employ malaria as a military weapon by encouraging U. S. Army soldiers to disregard malaria prevention measures was discovered in German laboratory documents captured during the last phases of the war in Europe, according to a report submitted by Major Saul Jarcho, director of the Medical Intelligence and Health Education Division, Preventive Medicine Service, Office of The Surgeon General.

The captured material, consisting of textbooks, reprints, and miscellaneous field notes "is an ingenious combination of truth and falsehood."

The Professional



Corn Belt Laboratories, Inc. — Corn Belt Serum Co., Inc., East St. Louis, Ill.

"We value the prestige this product gives."

An' Related Topics

Cheetah

The cheetah (*Acinonyx jubatus*) of India and Persia, and that of Africa (*Cheetah lanigara*), leopard-sized member of the cat family, is the fastest terrestrial animal. It



—From Animals

Cheetah, the Fastest Vertebrate

can attain a speed of 70 miles per hour. Being tamable and doglike in temperament, the cheetah is trained for hunting antelopes and other swift-running ruminants.

The number of sheep shorn last year in the United States totaled 40,337,000 head, of which 2,078,000 were in California—a state not commonly associated with sheep and wool. The wool crop of California sheep was 20,048,000 lb.—*Figures from the California Wool Grower*.

The authority of the Food and Drug Administration to regulate the retail sale of dangerous drugs has been challenged by a Georgia pharmacist on the ground of the unconstitutionality of federal interference with purely local commerce.

He who prescribes, dispenses, and/or administers drugs in strictly legal fashion may be convicted of crime in the case of fatal error. A New York pharmacist was convicted of manslaughter and sentenced to three years in the penitentiary for a fatal dose of a drug dispensed on a prescription for a child.

"Take Horse to Dentist Once a Year"

"See your dentist once a year" would be a good motto for horses, too, the horse committee of the American Veterinary Medical Association reports.

Horses have more difficult tooth problems than human beings, the committee said. The reason is the fact that horses' jaws don't jibe. The upper jaw is wider than the lower. Horses' teeth, therefore, wear off on the inside of the uppers and on the outside of the lowers.

Unless this uneven wear is equalized yearly by filing off the sharp, unworn points of the teeth, the horse will eventually have difficulty in chewing, the committee reported.

A tooth checkup at least once a year is necessary to combat this condition.—*Science Digest, June, 1946*.

In Lincoln's day the question was "Shall America remain a nation?" In our day the question is, "Shall the nation remain American?"—*Jersey Bulletin, March, 1946*.

The earth is in constant need of capable dermatologists. Its dermis is the sole source of life and the site of many derangements, requiring countless kinds and numbers of scientific treatments.

A human diet of less than 1,900 calories daily is a near starvation diet. The United States average is 3,300 calories, continental Europe (excepting Denmark), from 2,100 to 2,500, Sweden and Denmark, 2,800, and Great Britain, 2,800 to 2,900. The figures were prepared by the *Iowa Farm Economist*, published by Iowa State College.

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large and small animals. Novoxil* ointment supplied in $\frac{1}{4}$ -oz. tubes, also $\frac{1}{4}$ -lb. jars.

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SELECTIVE CHEMOTHERAPY

For antibacterial chemotherapy there are available a number of sulfonamide compounds.

Everyday Streptococcus Infections . . . Owing to its relatively good tolerance, Neoprontosil is of particular value in many streptococcus infections which are encountered in everyday veterinary practice, including septicemia, strangles, metritis, mastitis, distemper and meningitis. Relatively small doses have yielded very good results.

Write for booklet which contains detailed discussion of indications, dosage, manner of use, and side effects.



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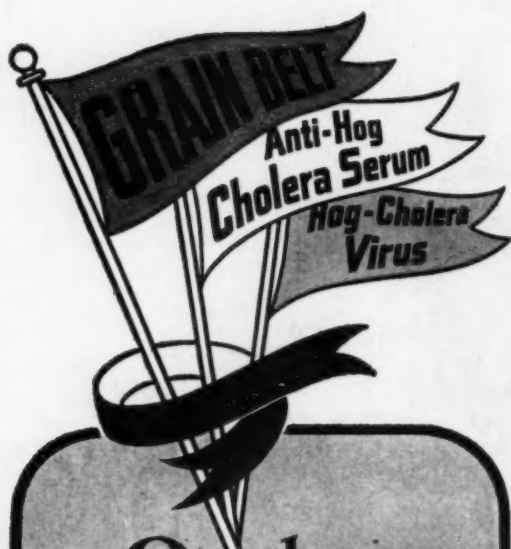
HOW SUPPLIED

For Oral Administration: Neoprontosil tablets of 5 grains, bottles of 50, 500 and 5000. (Caution: Not to be used for injection.) Neoprontosil capsules of 3 grains, bottles of 50 and 500. (Caution: Not to be used for injection.) For Parenteral Administration: Neoprontosil 5 per cent solution, bottles of 125 cc. with rubber diaphragm stopper.

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The Stray Dog

"Stray dog" is a loosely used term. Inasmuch as there is no stray dog in 99.0 per cent of all communities, the term ought to be defined. We've never seen a stray dog in this sphere of observation. The ownerless dog turned feral is a pretty rare animal. The term "stray dog" might be defined as an individual of *Canis domesticus* whose liberty to run about is permitted by its keeper. Most certainly, in the erroneous sense of the term, blaming the stray dog for the mounting incidence of rabies is that much stupidity.

Quoting Captain Judy of the *Dog World*: "The true dog lover, the dog breeders, exhibitors, humane societies, kennel clubs, good citizens—all must coöperate to keep *uncontrolled* dogs (*italics ours*) off the streets and to help to enforce reasonable dog laws for the protection of the public." The subterfuge of blaming the shameful incidence of rabies on dogs that just do not exist (*strays*) looks like grabbing at straws in the wind, in the face of the shameful rabies situation that has overtaken the dog population and which has caused thousands of deaths among man and animals and many more thousands of Pasteur treatments to be given. The least that can be said is that the onrush of rabies disgraces our intelligence.

Keep the dogs off the street, is the calm recommendation. Oh, yeah!

Glancing down our quiet side street from this literary workshop, scores of children may be seen playing games along with their dogs. Looked over for this piece, the canines range from the fancy Doberman of the doctor across the street to the retired conductor's disheveled mongrel next door, all beloved dogs of beloved children or of doting adults. These represent the "stray dogs" of the realm in any comparable community. *Uncontrolled* may be quite right, but *stray* is all wrong. They are just dogs. Often there is a dog fight that brings out excited adults to club the participants apart. One of these brought a sizable lawsuit; another, a doctor to take a few stitches in a boy's arm, and a settlement for damages out of court. Occasionally, a whole pack gangs up in pursuit of an amorous bitch. Some are AWOL in the morning and not nice to look at. The dog

(Continued on page xxvi)



new acid-ester
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PARTURITION

Cerbinol Ointment—a new Acid-Ester preparation—is enjoying outstanding success in reducing the time required for relieving the caking, swelling and inflammation in udder edema before and after calving.

THE TREATMENT simply consists in massaging the udders twice daily with Cerbinol Ointment. Excellent results are usually apparent in from one to three days after employing this therapy.

And it is most gratifying to note, that there have been no contraindications of any kind on any animal during or following the use of Cerbinol Ointment.

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MISSOURI VALLEY products meet all requirements for quality and reliability. When your stock needs replenishing, place your orders with our nearest Company-owned branch or Distributor.

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catcher brave enough to turn into this street is brave, indeed. His take, however, may be seen at the crowded pound and lethal chamber where these piteous creatures are redeemed or killed. At best, the whole picture is a human-canine tragedy. Of course, this picture does not apply to all dogs, but the well-known saying about the chain and its feeble link fits the case precisely.

Discipline the owner? You can forget that one, too. It's been tried since Aesculapius, and it hasn't worked. In 1946, A.D., we can't even classify dogs as livestock for self-protection. The tie between Canis and Homo is that strong. In fact, as strong as man's ability to take charge of his own welfare is weak.

"The stray dog" is not trumpery by a long shot; it has the weight of an indictment. In the United States, the mastery of an animal disease like rabies can be achieved only under central direction, and blocking movements to that end is equivalent to opposing the prevention of a lot of suffering and anguish, let alone sizable losses of time and wealth. It's a high price for a practical world to pay for a notion.

The St. Lawrence River and Veterinary Medicine

We lose our heads and sense of balance over little covenants and overlook the under-pinning of our future, *e.g.*, opening up the St. Lawrence River to 50 million people between the Rockies and Alleghenies, producers of 67 per cent of the nation's corn, 37 per cent of its wheat, 50 per cent of its meat, the lion's share of its milk and butter, and over 70 per cent of its steel, we keep them landlocked when a little pocket money—as money is counted nowadays—would open all these products to world trade. If this is of no consequence in the councils of veterinary medicine, we need a doctor.

A frictionless world, the dream of perpetual motion inventors, would be a world upon which life could not exist. In man's fight against friction by perfecting machinery and lubrication, of which the invention of the wheel was the first step, there is no desire to prevent friction entirely.—*From Science Digest.*

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- 1 To forever keep alive the understanding that the foundation of business is confidence, which comes only from integrity, fair dealing, efficient service, and common benefit.
- 2 To privately and publicly lend our unqualified support to those projects in the best interests of the veterinary profession, and to resist vigorously any force which might tend to interfere with their success.
- 3 To strive constantly to improve and modernize our products so that our business shall be developed on the basis of quality, service, and science.
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DDT Powder 50%

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| 1 lb. can (12 to case)..... | 72c per lb. |
| 10 lb. drums | 64c per lb. |
| 25 lb. drums | 60c per lb. |
| 100 lb. drums | 54c per lb. |

DDT Technical Powder 100%

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| 0.5 c.c. per box of 50..... | \$0.35 |
| 1.0 c.c. per box of 50..... | .40 |
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| 3 dram per tin of 25..... | \$1.20 |
| 6 dram per tin of 25..... | 1.80 |

PANTOBEX (High Potency B-Complex Capsules)

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| Each Capsule Contains: | |
| Vitamin B ₁ (3 mg. Thiamin Hydrochloride) | 1,000 U.S.P. units |
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| Liver B Vitamins Concentrate U.S.P. | 50 mg |

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| Bottle of 100..... | \$ 1.40 |
| Bottle of 1000..... | 12.00 |

CALF CAPSULES WITH "C"

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| Vitamin A | 5,000 U.S.P. units |
| Vitamin C | 250 mg |
| Vitamin D | 500 U.S.P. units |
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| Bottle of 100..... | \$2.60 |
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Our First Tuberculin Test

When we trek Down East to hold an annual session at Boston, we shouldn't forget to pay homage to the memory of Faust of Poughkeepsie. In 1891, Dr. J. Faust, of Poughkeepsie, N. Y., conducted the first tuberculin test in the field of practice in this hemisphere, and thus became to the United States what Nocard is to Europe. The difference is that Nocard won everlasting acclaim the world over, while in our annals Faust is hardly known to have lived. The senses of values *do* differ.

To get at facts concerning the birthtime of applied bacteriology, one turns the clock back to the first half of the 1890's when tuberculin, mallein, and antitoxins first came into use. While Arloing had questioned the interpretability of the thermic reactions of cattle to Koch's Old Tuberculin, Nocard was testing its reliability in France and Faust in New York, inspired by the experimental test of Leonard Pearson in Pennsylvania. But, his (Faust's) tabulated report on a number of tested dairy herds (*Am. Vet. Rev.*, June, 1891) is like a tumbled-down monument in a deserted wilderness, notwithstanding that it also commemorates Mohler's conquest of bovine tuberculosis in 1940.

Our Polluted Streams

From Dickens to Shaw to continental misanthropoids, poking shafts at our adventurous people of the farms and factories has used up a lot of ink without making a dint in the structure rising out of the wilderness. The hidden envy never got to first base. The horny-handed American and his offspring passed the innuendo as an incurable reaction of the less fortunate and let it go at that. They took more delight in perfecting their national garden and the little plot they dolled up for a permanent home. Over here, prettying things up has always been more fun than taking possession of a purchasable finished product. The real fun of American life has been making something not the pride of possession alone.

The other day, *par exemple*, a European newsman of considerable note was somehow prompted to write that "American factories shamelessly pollute hundreds of miles of fresh water streams." We've known that

(Continued on page xxviii)

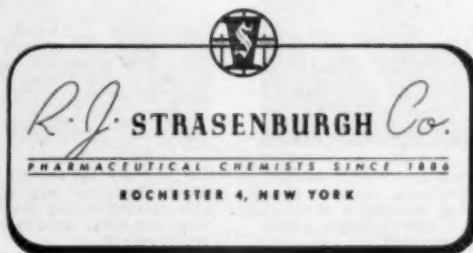


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For the treatment of
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Benlo provides dual action. 1. Treats sarcoptic and demodectic mange, non-parasitic mange, mites and other skin irritations caused by parasites. 2. Relieves itching . . . prevents excessive scratching. Benlo contains chlorine-free benzyl benzoate and benzyl alcohol emulsified in a neutral aqueous base. Spreads freely. Reaches deep rooted infections. Safe to use. Available in 6-ounce, pint and gallon containers. Write for folder B-2.

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TOTAL NUTRITION FOR WINNING CONDITION!

Walter R. McKinney, Arrowcrest, Birmingham, Alabama, feeds Armstrong to "Lucky" (left) and "Chief."

In 25-lb., 50-lb. bags



Now . . . Here's a Fully-Nourishing Food That Dogs REALLY LIKE!

It consistently saves time . . . labor . . . money . . . as dogs keep enjoying Armstrong's total nutrition . . . day after day. Armstrong is digestivated. Its appetizing flavor doesn't tire the taste. Its nutrition doesn't "fade out"!

Yes, you . . . and your clients . . . can rely on Armstrong's total nutrition for winning condition! Feed Armstrong . . . and water, nothing else. This food has a scientific balance that just can't be matched in kennel or home. Indeed, it can't even be improved upon . . . no matter what other ingredients or foods you may choose to use!

TRY ARMSTRONG . . . FREE! See for yourself that it's a food you'll want to feed . . . and recommend. Send for **FREE** full-size professional sample today.



Half a litter of Scottish Terriers, fed Armstrong, ran nearly twice as long in exercise wheel as others, gained weight during the experiment.



The Scotties that weren't fed on Armstrong ran only about half as long in the exercise wheel and either failed to gain or lost weight.

Armstrong is DIGESTIVATED to help assure dogs of . . .

- 1. MAXIMUM ENERGY AND ENDURANCE**
Tests indicate dogs may have up to twice the stamina when fed Armstrong.
- 2. GOOD DISPOSITION**
Armstrong is really complete, offers all essentials for health, contentment.
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Minerals, vitamins, amino acids, other essentials in a new, scientific balance.
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Armstrong offers more than 2½ times the vitamins known to be required daily.
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Contains hemocellulose to aid digestion, assimilation and elimination in dogs.
- 6. SLEEK, HEALTHY APPEARANCE**
Formulated from new and improved ingredients for more food value per feeding.
- 7. EAGER APPETITE**
Made with liver meal plus meat meal.

FREE—Full Size Sample

Armstrong Food Co., Inc., Sherburne, N. Y., Dept. 209-G

Gentlemen: Please send me a free professional sample of Armstrong Digestivated Dog Meal.

Name

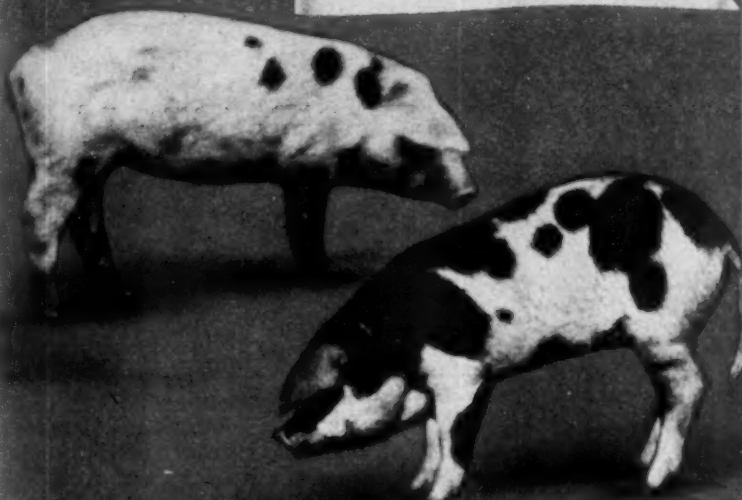
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Means to Mankind



Which Hog Has **CHOLERA?**

● One of these hogs has Cholera—the other has Erysipelas. Which is which? On the RIGHT answer (and treatment) may depend your year's hog profits. Today, thanks to Veterinary Science, you no longer need to GUESS. Your veterinarian, with his years of specialized schooling and experience, is the one person best qualified to provide dependable diagnosis and treatment of these and other complex swine diseases.

This is just one of the many ways in which the veterinary profession is adding to the livestock raiser's profits through scientific, professional service.

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| Single Bottle | \$ 2.00 |
| 1-4 Dozen and One FREE . . . | 5.00 |
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(Continued from page xxviii)

right along and are starting to do something about it. Some day, my dear chap, we expect to take speckled trout from the creek back of the barn. Our critics should be patient if really worried. They've had a head start, over there. The funny thing just now about picking on stream-polluting factories is that they *did* put a lot of shooting irons in the hands of the frightened in two, well-known scraps of recent times.

The "Er" and the "Or" Queue

"Reactor," for example, is a veterinary-coined word, fifty or more years old and here to stay. One of the reasons for this yoo-hoo is that it sometimes barges in wagging an *er* instead of an *or* tail, and the other is that the word book, whimsically called the dictionary, hasn't given a stanchion to this perfectly well-born vocable. Moreover, it raises the question of the *er* and *or* suffixes and their modifications in many words of every day use.

If perchance you can explain, off hand, why you tag some roots with *er* and others with *or*, you're a glutton for linguistic details, *e.g.*, experimenter and investigator for the very same person doing the very same thing. Having solved that one, the plot may thicken. There's the little matter of inserting an *i* for the cashier and not for the teller at the next window, and here's the bookkeeper at this desk and the auditor at that one, the proof reader here and the editor over there. Then sometimes it's *yer* as in lawyer and *eer* in engineer. You write: "The farm adviser works in an advisory capacity." Oh, no, it's not a matter of person or thing, *vide*, writer and reporter, *vis-à-vis* refrigerator and regenerator. Seems to be a matter of derivation, and there is where the trick comes in, unless you're hep to that bit of acreage. To further elucidate this highly edifying thesis, one ought to insinuate that your literacy in this respect may stem from experience rather than from profound erudition in verbal architecture.

Yes, my boy, reactor is correct, but it's a \$64 question in any man's quiz. Now, run off to bed, as dad would say to the inquisitive fifth grader. There's the paper shortage and the question doesn't belong in a journal of veterinary medicine, anyhow.

Outbreaks of typhoid fever are named among the great threats to occupied Germany.

We're Sending 37,282 Dog-Breeders to You



Died—because he couldn't talk

Major did pretty near everything but talk. If he had known how to do that he'd be alive today.

One day Major was playing with an old rubber ball in the street. Suddenly, he swallowed a stone which had stuck in the ball.

When he came home, he vomited. His master thought he had indigestion. That was his diagnosis for death.

A veterinarian could have saved Major by detecting the stone in his stomach with an x-ray.

Remember: You are responsible for your dog's life and health. If you suspect trouble, don't risk diagnosing him yourself. Respiratory disease, indigestion, persistent itching, etc., constipation—are often symptoms of serious disorders. Incorrect diagnosis neglects the real cause of the ailment and can prove fatal.

Ask your veterinarian: "Can tracing a foreign object in the stomach for indigestion have serious or fatal results?"

GOSHEN LABORATORIES, INC.
GOSHEN, NEW YORK
"THE PRACTITIONER'S HOUSE"



THE VETERINARIAN . . .
your dog's best friend

This is a reduced reproduction from Dog World

THIS is the first advertisement of our campaign for veterinarians in Dog World. Its theme is "Diagnosis for Death."

Each advertisement dramatizes a common instance where amateur diagnosis and treatment result in death for the dog. We then ask the dog-breeder to discuss the case cited with you.

Our purpose is to help educate the public on the wisdom of professional diagnosis and advice *before* treatment.

The picture captioned "The Veterinarian—Your Dog's Best Friend" appears in all advertisements.

Goshen Laboratories sells to veterinarians *only* for we feel that over-the-counter sales encourage amateur diagnosis and treatment. Look for the startling "Diagnosis for Death" ads in Dog World each month. We will appreciate your comments and those of your clients.

GOSHEN LABORATORIES, INC., GOSHEN, NEW YORK

"THE PRACTITIONER'S HOUSE"

xxxiii

ANTISEPTIGEN



**Aromatic Terpenes, Thymol,
Sodium Orthophenylphenate
and Alcohol 7%**

**Non-Toxic — Non-Caustic
Non-Corrosive**

PHENOL COEFFICIENT TEST Federal Drug Administration Method

Laboratory Sample No. 7258

Identification: Antiseptigen.

Organism: (24 hours at 37° C., extract broth culture)
Staphylococcus Aureus

Organic Matter: None.

Temperature of Medication: 37° C.

Dose: 0.5 c.c. of culture to 5 c.c. dilute disinfectant.

Subcultures: One 4 m.m. loopful to 10 c.c. broth.

The subcultures were incubated at 37° C. for 48 hours
with the following results:

| Sample | Dilution | Minutes Exposed to Disinfectant | | | Phenol Coefficient |
|---------|----------|---------------------------------|----|----|----------------------|
| | | 5 | 10 | 15 | |
| No 7258 | 1- 50 | — | — | — | 80(80) 1.00 P. C. |
| | - 60 | + | — | — | |
| | 70 | + | — | — | |
| | 80 | + | — | — | |
| | 90 | + | + | — | |
| | -100 | + | + | — | |
| | -110 | + | + | — | |
| Phenol | -120 | + | + | + | |
| | 1- 80 | + | — | — | |
| | - 90 | + | + | + | |

The above test indicates that this product has a staphylococcus aureus Phenol Coefficient of 1.00 as determined by the Food and Drug Administration Method at 37° C., or has a germicidal power toward staphylococcus aureus 1.00 times that of pure phenol

1 Gallon Bottle.\$ 4.75

5 Gallons 21.40

Curts-Folse Laboratories

73 Central Avenue
Kansas City, Kansas

A Pet Peeve

Columnists of the modern newspaper are wont to caption their reaction to a swank bench show with "Society Goes to the Dogs," and (I guess) the headline gets the rating of a wisecrack from the deeper sulci of human erudition though, as a matter of fact, no other headline we can think about could miss the target as far as that one. Mind you, we're not blaming the underpaid columnists. They have to (and do) amuse the unschooled with as many topics as there are days in the calendar year, so that expertness of the experts on every given subject can hardly be expected, life being too short to hit the top of anyone's *metier*. Seldom, however, does the literary blunderbuss miss the bull's eye that badly. It seems timely, therefore, to say that going to the dogs and going to a dog show are solipeds of a different hue, smell, feel, and sound. In short, it's a lousy caption anyway you take it. Goodness, when folks go to the dogs, they don't buy a ticket nor crash the gate. They just walk right in. Thanks to Mrs. A. M. Henshaw (*The Dog News*) for the inspiration.

Industry spends 5 per cent of its gross receipts on research and another 5 to 10 per cent on advertising while agriculture, provider of the basic human need, spends but little more than 1 per cent of its gross income for both research and advertising. —*Agricultural Adviser Toyne of the American Consulate of Australia, J. Dept. Agric. South Australia. November, 1945.*

A cow producing 1,000 lb. of butter fat, when milked four times daily for 365 days, may be expected to produce about 583 lb. of fat on two milkings a day for 305 days under average dairy conditions, says Jim Maverick in *Holstein-Friesian World* (March 16, 1946).

Every time a veterinarian accepts an office in a civic organization he proves that he is sensible and valuable. His community realizes this and appreciates him for it.

Although 80 per cent of our cattle are found west of the Mississippi river, 80 per cent of our veterinarians are east of this river.



PRECISION Instruments

for Accurate Diagnosis

For identifying animal diseases through blood, tissue, fecal, and other microscopic examinations, high quality optical equipment is of prime importance. That is why so many Veterinarians select these Spencer Instruments: *Spencer No. 33*—one of the most widely used medical microscopes . . . *Bright-Line Haemocytometer*—by far the most popular blood counting chamber . . . *Spencer No. 370 Adjustable Microscope Lamp*.

For complete information about these instruments,
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CASES OF FOLLICULAR MANGE IN DOGS TREATED WITH **GOODWINOL!**

The prompt eradication of the itch mite—the rapid relief of itching and scratching—the fast healing of the lesions in all of a clinically controlled series of 443 cases of follicular mange . . . these results bear vivid testimony of the efficacy of GOODWINOL.

• Rapidly promoting the growth of new hair, this greaseless, odorless, non-toxic, wash-off ointment (containing rotenone and orthophenylphenol in a cholesterol base) does not injure the eyes, is very economical—a little does a lot—and is sold only to veterinarians for dispensing. Samples available to veterinarians upon request.

AVAILABLE: From your local veterinary supply house or from the manufacturer—in 1 oz. tubes; or in 1, 2, 5, or 10 lb. tins.

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Relieves itching quickly

Thirty Years of War, the Forecast of Peace

H. B. Liddel Hart, under the title "War, Limited," (*Harper's*, March, 1946) sees hope for the jittery world after the thirty years of war just ended, which has its counterpart in the Thirty Years War (1618-1648) when more than one half the population of the German states perished and left a trail of degradation beyond hope of recovery for two centuries, in the judgment of historians. It jarred common sense into sensible people and brought long stretches of peace. Then came such relapses as the atrocities of the French Revolution and the looting in the Napoleonic wars, which again brought Germany to her knees and another stretch of peace until Sherman's devastating march through Georgia; Sherman's embittering campaigns on the Shenandoah, Libby Prison, and Andersonville; Kitchener's scorch and burn tactics in South Africa with concentration camps for Boer women and children; German bombing of cities in the Franco-Prussian War and their U-boat atrocities of World War I; Britain's blockade of food to starve Germany; and the leveling of whole cities of Britain, Germany, Italy, Russia, and Japan in the drama just closed. If these exhibitions of human chivalry spell Peace, optimism is not a corpse.

He who carries a grudge carries a heavy load.

The harm done by a scrub bull lives long after he is dead.

Plant growth writes the story of soil fertility—or the lack of it.

As much as 10 per cent of a dog's ration may consist of ground glass without producing recognizably harmful effects.

Any job that requires the opening and closing of gates can be done more economically with horses than with a tractor.

Several New Jersey farmers have tested and proved the value of farm fishponds. Usually they can be built with little expense, and if properly managed, will yield as much as 250 lb. of high-vitamin food per acre of water.

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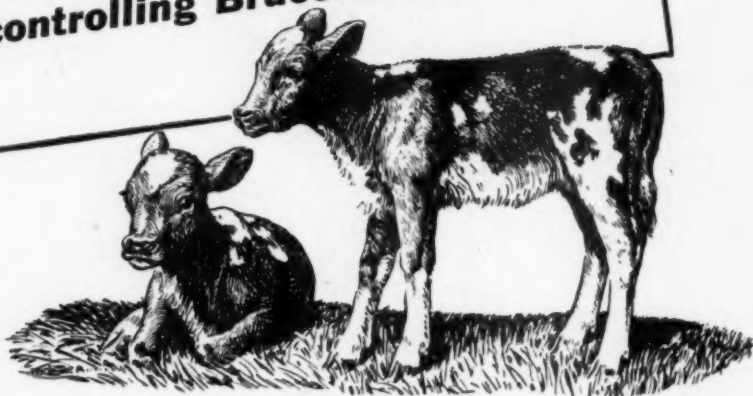
tinuing research procedures which determine production methods at the Schenley Laboratories...are the vital core of the confidence with which you can specify Penicillin Schenley.

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calfhood vaccination is econom-
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Horse Meat

In the United States where thoughts of horse meat never sharpened an appetite, the slaughter of horses by packing plants under federal inspection has been mounting at an appalling rate. Outlets: dog food, exports, fur farmers, and an inconsequential number of human *phages*. These have sent packers on a nationwide round-up for horses that bring 15 cents a pound in cans, a valuable hide, and the usual by-products of the meat-packing process. Since the market value of our remaining 10 million horses per head on the hoof ranges below the returns received from the slaughtered animal in the form of meat and by-product, the new use for horses is sure to increase. In 1945, the slaughter amounted to 80,000 head in round numbers—the USDA reports an increase of 204 per cent over 1943. The increase for 1946 will be even greater on the basis of current reports. An unfortunate part of the situation is the large proportion of horse meat the UNRRA is promising to foreign countries, regardless of its harmful effects on the dog-food industry and fur farming, in the face of the fact that a too large percentage of the available horse meat is set apart for export as compared to other meats. The amount set apart for relief abroad is entirely out of proportion to the part of the horse population available for slaughter. The fur farmers are pointing out the injustice, since, to them, horse meat is vital.

An outstanding discrimination against livestock are the bridge tolls of three cents per hundred weight assessed for animals crossing the Mississippi south of the Ohio (Memphis to New Orleans). The charge amounts to about six dollars per carload in addition to the regular freight rates. Southwestern and national livestock associations have joined in a movement to have the charge abolished.

About 20 per cent of the counties in the United States have been officially accredited as being free from brucellosis.

A good listener is not only popular everywhere—after a while he knows something.

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TIME-TESTED at our own dog kennels for many years, Ken-L-Biskit has been constantly improved so that today it is the favorite of champion owners all over the country. On the banks of Rock River, Rockford, Illinois, Ken-L-Biskit has been fed exclusively to our dogs for generation after generation where we could watch, firsthand, the effect of its nutritional benefits.

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In this suit-conscious age, such protection is not only wise but, as shown by the claim files, a practical necessity.

The insurance is placed with one of the largest and most reliable underwriters in the country.

Write at once for an application and descriptive folder, as the policy year begins on December 1.

**American Veterinary Medical
Association**

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Burning Books

The best way to make books famous is to burn them like the military government of Germany is doing with the books of the Hitler regime. Books burned make future generations curious as to what they contain and, in these days of cheap reprinting, the *verboten* volumes will be prizes for the book collectors. It seems, however, that the politicians of 1946 are no less stupid than in the days of Galilei (Galileo) and Bacon (Roger), whose books were incinerated to the end of deifying authors whose names would now be virtually forgotten. In their quest for power, politicians stay pretty dumb. Through their fears and sense of weakness, they've committed the name of Hitler to the ages. "What's writ is writ" and should never be willfully destroyed. If it doesn't amount to anything, it will destroy itself without sacrifice of human dignity and wisdom.

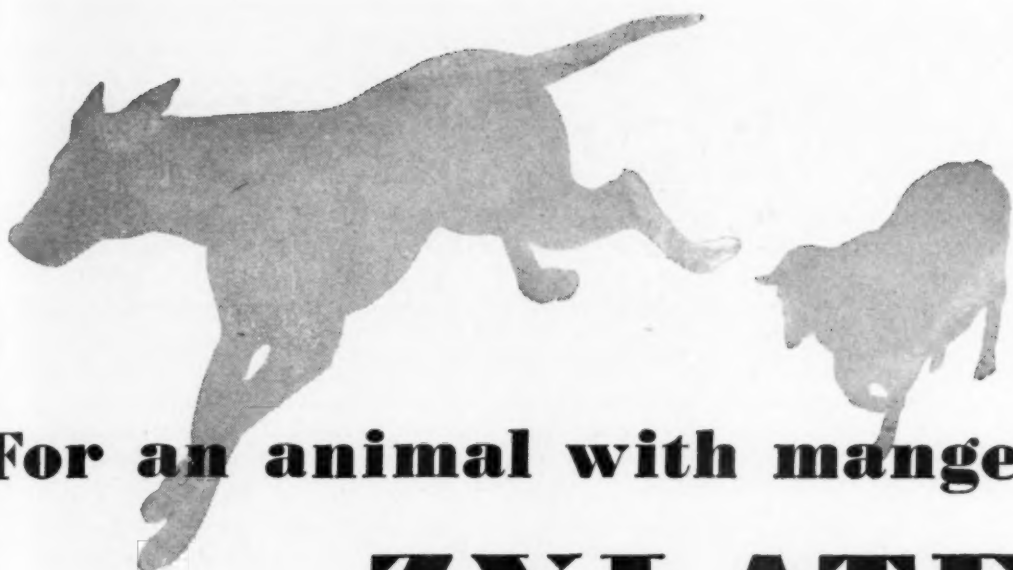
Disease Unkind

A prominent magazine of the drug trade is perturbed — editorially — over the increasing volume of outdated biological products that retail druggists have to return under the regulations enforced by the U. S. Bureau of Animal Industry. The cycle is vicious and there's no remedy in sight. The cause, however, is apparent. The salesman, bent on sales volume, loads up the druggist without meeting much sales resistance because unsold goods can be returned for full credit; and disease being what it is, neither the best salesman nor the wisest druggist has found the way to predict demand. The situation is called serious. What an ungrateful cuss disease is!

Birds which live on adult insects are not as great a factor in destroying insect life as those which live principally on insect eggs and larvae. The one destroys a few, the other the potential billions.

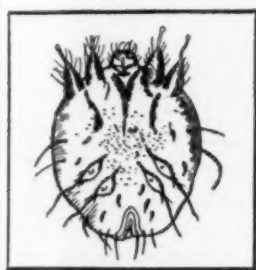
DDT is said to owe its insecticide properties to the fluorine, chlorine, and iodine contained.

The weight of women in the western United States averages 127 lbs. — *Science Digest*.



For an animal with mange

ZYLATE



Sarcoptes scabiei



Demodex folliculorum

For prompt and effective treatment of demodectic and sarcoptic mange in dogs, cattle, sheep, horses, and swine†—ZYLATE,* a benzyl benzoate preparation in a special vehicle.

In these animals, ZYLATE is *easily applied*, is not messy, usually causes

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Write for literature on the use of Zylate in Veterinary Medicine.

Department of Veterinary Medicine

FINE PHARMACEUTICALS SINCE 1886



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The low subscription price of Section F (\$5.00: Foreign, \$5.50) is possible because this is a cooperative undertaking. However, our production costs have more than doubled during the past few years and we urgently need more subscriptions if we are to maintain a complete coverage and keep our prices at their present low levels.

BIOLOGICAL ABSTRACTS

University of Pennsylvania, Philadelphia 4, Pa.

Tucked Away Inventions

It is said on obviously good authority that a large number of extremely useful inventions are tucked away in the vaults of the big industries, labeled "Don't Develop." The reader may hew out his own reasons. Among these gadgets are (1) An everlasting match, of which one per person will last a lifetime; (2) a depilatory, harmless to the skin, that will make skin beardless; (3) a flashlight that can be recharged from an electric light circuit in a jiffy; (4) a machine that makes gold leaf which is now pounded out by hand; (5) a form of lubrication that will make auto cylinders (and such likes) practically everlasting; (6) a paint that will make iron parts as lasting as stone or cement; (7) an electric light bulb of three or more circuits that can be switched to the next when one burns out; and (8) so on through innumerable lists of useful inventions that are tucked away as harmful to the given industry. It is said that the secret of the magic match is going to be released by order of the Department of

Justice. What a difference between industry and medical science in this respect! Or, another way to put it, what would the world be should medical science take on the behavior of the industrial world?

Colostrum may be frozen in containers holding a sufficient amount for one day's feed, and then, by packing in sawdust on the north side of a building, it will remain solid in Vermont throughout the winter, says *Vermont Station Pamphlet 11*. It can then be fed to calves in place of normal milk.

In days of yore, if anybody missed a stagecoach, he was content to wait two or three days for the next one. Now, he squawks if he misses one section of a revolving door.—*Western Dairy J.*

Protein starvation is still one of the most common errors of swine husbandry, and is often overlooked unless the owner is carefully questioned.—*Successful Farming.*

DEPENDABLE *as a* WATCHDOG



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VETERINARY BIOLOGICALS & PHARMACEUTICALS

FORT DODGE LABORATORIES, INC., Fort Dodge, Iowa



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Stoneway Lou was raised on Kasco Dog Ration and water — nothing else . . . 4,743 meals, or a total of over 3 tons of Kasco. A winning combination — Stoneway Lou and Kasco!

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Please send me samples of Kasco Dog Ration and your Dealer's Proposition.

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The Auto and the Horse

Had you been practicing veterinary medicine during the first few years of this century, say forty years ago, you would number among those who denounced gas-drawn vehicles and laughed at the idea that they would ever amount to much. By 1912 and before, wasn't your face red as horse-drawn vehicles were vanishing from sight like April snow? You admitted you were wrong, apologized for your bad guess work, and bought an automobile for your business and perhaps another for the little woman and the kids. No change of mind more absolute ever came upon the veterinary profession since Louis Pasteur caught germs redhanded. Come 1946, you can again rejoice at your childish predictions — the successor of the horse and buggy is killing and maiming the American population at a staggering rate with no Nemesis in sight. The automobile has put mankind on trial as a killer more atrocious than the tools of Adolph Hitler. The feel of the reins made men kind and cheerful, that of the steering wheel

brought on the basest ego of highway banditry. Yes, my friend, although you couldn't have guessed the *modus operandi* of the coming killers, your predictions were sound.

California sheep growers will not agree with Frank Thorne's "Nature Rambling" in *Science News Letter*, where he says "Wolves were harried by professional hunters while nobody bothered about coyotes except to take offhand shots at them when they prowled too close to the ranch house."

The columbaceous strain of psittacosis virus was isolated from domestic pigeons at Johannesburg and Cape Province, South Africa, in an investigation of the disease in a parrot.—*From J. South African Vet. M. A., Abst. Exper. Sta. Rec. March, 1946.*

During World War II, American farmers produced 7 billion more pounds of meat than during World War I with 3 million fewer farm workers, says the *National Livestock Producer*.

COMSTOCK BOOKS IN VETERINARY MEDICINE

MANUAL OF VETERINARY CLINICAL PATHOLOGY

David L. Coffin, School of Veterinary Medicine, University of Pennsylvania

A concise handbook of information on the most practical laboratory procedures now in use for the diagnosis of animal disease. It contains data on everyday techniques and methods of collection, preservation, and shipment of specimens for diagnosis, which are of invaluable aid to the veterinary practitioner, laboratory worker, and student. \$4.00

* * *

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This valuable work brings together discussion of all the important infectious diseases of domestic animals and includes both the nature, diagnosis, and treatment of the diseases and information concerning the bacteria, fungi, protozoa, and viruses pathogenic for animals. \$6.00

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H. H. Dukes, Professor of Veterinary Physiology, Cornell University

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Clive M. McCay, Professor of Nutrition, Cornell University

Addressed to the intelligent layman wishing authoritative information about his pet's nutrition, this helpful guide is of equal value to the veterinary practitioner and kennel manager. The book presents a scientific, understandable summary of the knowledge necessary to ensure proper and economical feeding of dogs. \$1.50

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Beginning July 1, the CORNELL VETERINARIAN will be published by the Comstock Publishing Company, Inc. Subscriptions will be taken at the Comstock space directly across from the Registration Desk at the Boston Meeting of the American Veterinary Medical Association.

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Boston Session

American Veterinary Medical Association

August 19-22, 1946

On recommendation of the Boston Convention Bureau and the Hotel Association, reservations will be handled by a housing bureau which has been set up by the Committee on Local Arrangements.

The list of principal hotels and the reservation blank below are for your convenience. All applications are to be sent, *not to hotels directly*, but to the Housing Bureau.

Important: Reservations without arrival date cannot be accepted

| HOTELS AND RESERVATION PRICES | | | | |
|-------------------------------|------------------|------------------------|--------|--------------------------------|
| Hotel | Single | Double | | |
| | | Double Beds | Double | Twin Beds |
| Bellevue | \$3.85; \$4.40 | \$5.50 | | \$6.60 |
| Bradford | | \$5.00, \$5.50; \$6.00 | | \$5.50; \$6.60; \$7.70 |
| Copley-Plaza | \$5.50 | \$7.70 | | \$9.90; \$11.00 |
| Copley Square ... | \$4.00 | \$7.00 | | \$10.00 ¹ |
| Essex | | \$4.40; \$5.50 | | |
| Kenmore | | \$6.60 | | |
| Lenox | \$3.30; \$4.00 | \$4.40; \$5.50 | | \$6.00; \$7.00 |
| Manger | \$3.85; \$4.40 | \$4.40 to \$6.60 | | \$5.50; \$6.00 |
| Parker House ... | \$4.40 | \$5.50; \$6.05 | | \$7.15; \$12.00 ¹ |
| Somerset | \$8.00; \$9.00 | | | \$12.00 to \$14.00 |
| Statler | \$3.85 to \$8.80 | \$5.50 to \$11.00 | | \$7.70 to \$12.00 ² |
| Touraine | | \$6.50 | | \$7.25 ² |

¹Suites. ²Suites of Living Room, Bedroom and bath, from \$12.70 to \$22.00.
³Suites consisting of two rooms having 4 beds and 1 bath, \$14.00.

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|---------------------|-----------------------------|------------|
| | | Rate |
| First Choice | Single Room | Rate |
| | Double Room | Rate |
| Second Choice | Twin Bed Room | Rate |
| | Suite | Rate |
| Third Choice | No. in Party | |

Date of Arrival (This must be indicated)

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All Reservations must be made by Aug. 1, 1946

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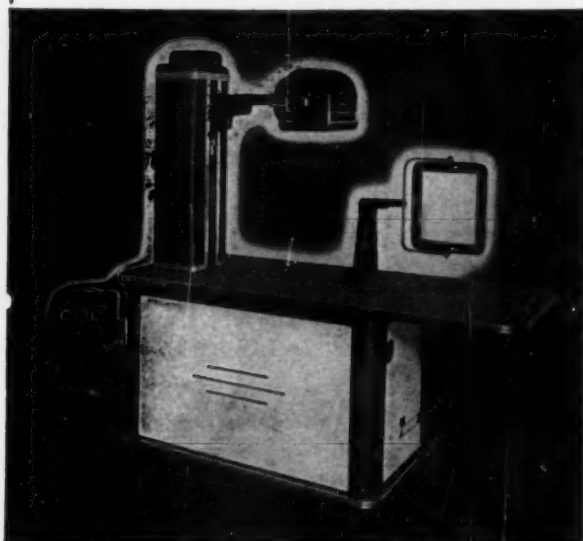
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"Resents Criticism of Profession"

Veterinarian Edward J. Scanlon, of Philadelphia, Pa., commenting on the item in Aug. DW by Bart King that "veterinarians are poor dietitians," writes:

Any canine specialist in the veterinary field will tell him that the majority of cases he is called to treat are digestive in origin. How in the name of common sense can men like that afford to be "poor canine dietitians?"

Dog World, in my opinion, served no useful purpose in publishing that article. It served neither its readers (merely gave them improper and incorrect information) nor the veterinary profession.—*Dog World, November, 1945.*

Loving dogs is all right, but it can go too far. A dog fancier and his champion Setter of many shows, returning from England, were lost at sea. A famous dog magazine gives a long history of the Setter to show the great loss the fancy suffered by the misfortune.

Hoof Is Hoof

Among the conglomeration of phony films that file across the screen of veterinary literature with considerable regularity is "hoof-and-mouth disease," a misfit that must make the anatomist wonder what's wrong with the maker of pathologic terms. To the anatomist, hoof is hoof and foot is foot, and no more interchangeable in his glossary than eye and ear. This reminds one that the pathologist ought to preserve some of the discipline acquired in the dissecting room, in respect to calling things by their right names. Anyhow, the anatomist wouldn't have the unschooled looking for hoof blisters through careless usage. No siree, it's not smart to curb the anatomist in the veterinary college course. His engravings never wear off.

Of the 20 million horseshoes manufactured in the United States last year, 70 per cent came from a factory at Joliet, Ill., the pioneer Phoenix Manufacturing Company, which never deserted the science involved in its art.

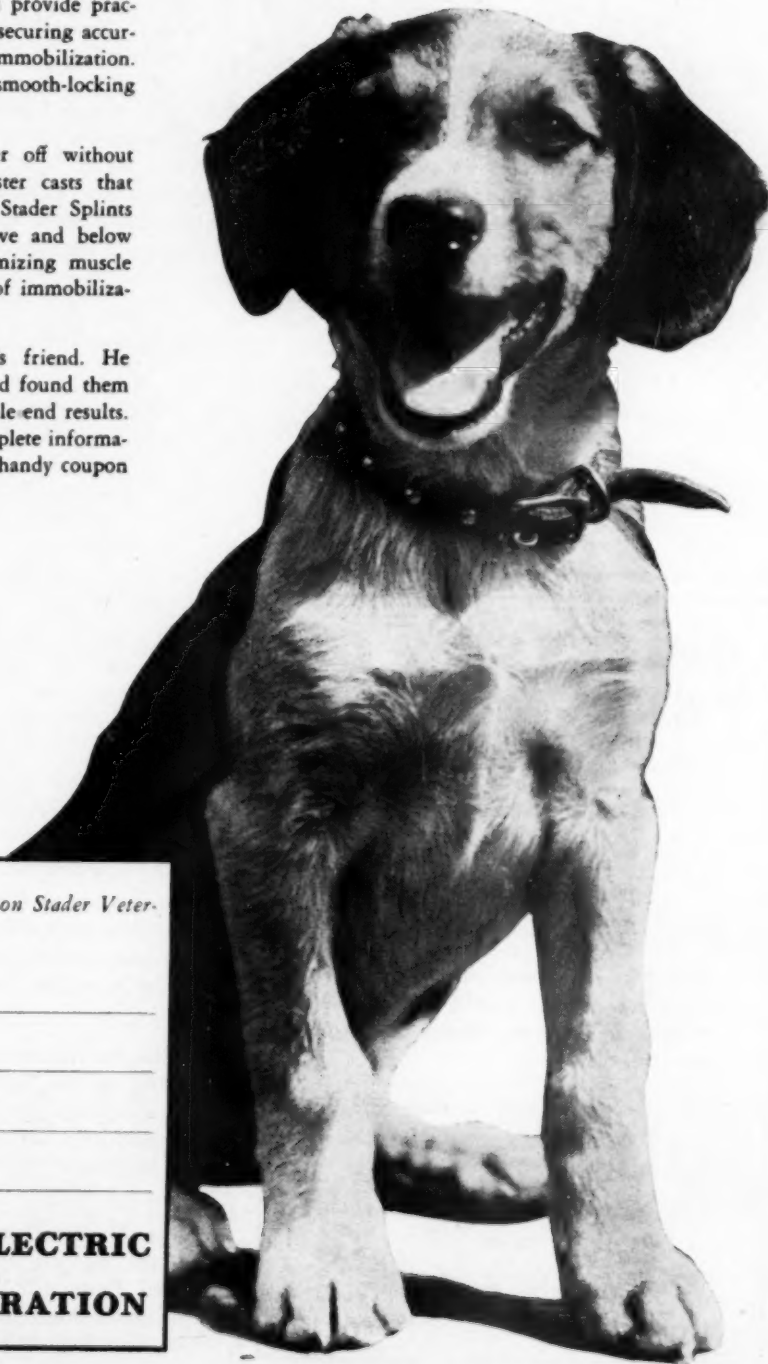
Tuffy is doing swell now. A little while ago he wasn't so jaunty . . . fractures aren't laughing matters. But Tuffy's pal, the veterinarian down the street, knew just how to fix up his friend.

He reasoned rightly that the Stader External Reduction and Fixation Splint was just the instrument to use on Tuffy's fracture. He knew that Stader Splints provide practical and efficient means for securing accurate reduction and rigid immobilization. Even Tuffy couldn't pry the smooth-locking adjustments loose.

Certainly Tuffy was better off without circular bandaging and plaster casts that interfered with circulation. Stader Splints afford articular freedom above and below the fracture site, thus minimizing muscle atrophy due to long periods of immobilization.

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Bovine Tuberculosis Eradication— A True Story

While visiting a certain European city, which need not be named for this purpose, a group of well-known American veterinarians chartered a bus and went about town on a sight-seeing trip to break the monotony of an idle afternoon. Comfortably seated in the lobby of the hotel after their return, one of them (his name was John F. Devine) asked, "What particular sight impressed you most?" The answers included buildings, monuments, parks, cathedrals, whereupon Devine remarked, "What impressed me most was the large number of hunchbacks and crippled children."

Come and Get a Jeep if You Can

An officer of no mean importance said the other day that a lot of army property had been put in his hands for sale to civilians but, he added, "If anyone can figure out the government's rules for getting hold of two cents or two thousand dollars worth of this property he's smarter than I am, and that goes for the best legal talent on the post."

The practitioner who thinks fast and doesn't talk much has fewer mistakes to explain on the next call.

A man's real estate is what he puts in his head. It's creative and doesn't change hands.

The *National Fur News* estimates that from 4,000 to 6,000 animals will be exhibited at shows during this year. Upward of 3,000 were shown last year.

While medical science is slowly and surely reducing the mortality of the major ailments threatening human life, the killings and maimings from violence and accidents keeps climbing to frightening heights.

From the first quarter to the last quarter of 1945, the supply of meat *per capita* increased from 122 lb. to 175 lb., according to a spokesman for the *American Cattle Producer*. Ask the little woman.

California Show Dogs Thrive on **RED HEART!**



Champion Rocky Point Rob Roy (left), 7-time winner of Best of Variety. Between shows he sires future champions, like Martha, his 4-month-old daughter. Frank and Barbara Jordan, owners of the Monterey Kennels, specialize in breeding and showing these beautiful and popular Black and Tan Cockers.

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(Continued on page lviii)

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Books on Dogs by Veterinarians

Among the 20 books on dogs recommended in the April issue of *American Kennel Gazette*, the authors of five are veterinarians, four American and one British, to wit:

How to Choose a Dog, by Frank Thomas Burton, M.R.C.V.S.

How to Raise a Dog in the City, by James R. Kinney, V.M.D.

Care and Handling of Dogs, by John L. Leonard, D.V.M.

How to Own a Dog and Like It, by A. C. Merrick, D.V.M.

Your Dog and Your Cat, by Roy H. Spaulding, D.V.M.

The publishers in the same order are Jarrolds, London; Simon and Schuster, New York; Doubleday Doran & Co., Garden City, N. Y.; Country Life Press, *ibid.*; Appleton & Co., New York. The bare facts indicate that small animal medicine is not deserting the field of husbandry as large animal medicine did in the early stages of its development.

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The Wire Fox Terrier, Wire for short, is a relatively new breed of dogs, under that name. All Wires are descendants of Cackler of Notts, whelped in 1898 in England. Cackler of Notts, outstanding figure of his breed, won eight championships by 1910.—*From Fox Terrier.*

Portland (Ore.) fluid milk producers went on a milk strike (*Western Dai. J. Apr. 1946*) to obtain relief from the OPA. They demanded an increase from 95 cents to \$1.15 per butterfat pound.

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